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SOME REQUIREMENTS OF MODERN DERMATOLOGY IN THIS COUNTRY

DEVELOPMENT OF THE SPECIALTY *

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In spite of numerous handicaps, dermatology has made substantial progress. In regard to general recognition and popularity, its growth during the past decade has been gratifying and even spectacular. It has always been and still is a lucrative field scientifically; it is now a lucrative field financially. Partly because dermatologists are practical people, but mostly because of necessity, evolution has been largely along practical lines.

Dermatology in this country has been developed to a considerable extent by men who have been compelled to support themselves and their dependants with revenue from private practice. A combination of altruism, pioneer spirit, thirst for knowledge and a desire to improve the specialty has caused many of these men to donate time, effort and money to charity, teaching and research.

Encouragement and help have been received from some medical colleges and institutions, while others have been indifferent. Medical institutions have political, financial and other difficulties. Presumably, they have done the best they could. In any event, most of the necessary incentive has been provided by individual dermatologists, and often the requisite financial support has been supplied or obtained by these men.

PRIVATE PRACTICE

Roughly, there are two types of dermatologic practice. In one, there is an office consisting of two rooms without laboratory, surgical or physical therapy equipment. The practitioner's personal efforts are devoted to clinical diagnosis and to the writing of prescriptions. In cases requiring laboratory investigation, surgical treatment, intravenous therapy or physical therapy, the patients are referred elsewhere.

This type of practice was common years ago. It is now limited largely to those who are compelled to restrict their professional activities. If this method of conducting practice were to become

* President's Address, Fiftieth Annual Meeting of the American Dermatological Association, May 12-14, 1927.

popular among the younger men, it would be a menace to future development. Later, I shall discuss the dermatologic unit in institutions. Some institutions refuse to permit the establishment of such a unit. In certain quarters this has been used as an excuse for a conservative type of practice or for inertia on the part of the practitioner. It will be well for the dermatologist to maintain independence in private practice and not to be guided by the policy of a medical school unless it meets with his approval.

The second type of practice to be considered has developed within the past two decades, and it is one of the important accomplishments of American dermatology. It has attracted attention, respect and admiration; it has led to the idea of a dermatologic unit in institutions, and it is making the dermatologist more proficient, resourceful and self-sufficient.

The requirements for this type of practice are numerous. In addition to the highly specialized skill that is peculiar to the specialty, the acquisition of which requires a long time, the dermatologist should possess and use as much general medical knowledge as can be obtained. The skin is one organ of a complex whole from which it cannot be separated. Patients with diseases of the skin should be treated and studied from the standpoint of the internist and the laboratory as well as from that of the "externist." Many articles have been written urging a closer relationship between dermatology and the basic medical sciences. Recent generations of dermatologists have recognized and have attempted to fulfil this requirement.

A thorough acquaintance with the forms of physical therapy useful for the treatment of patients with the various dermatoses is, of course, essential.

Briefly, the training, the office and its equipment should be designed to cover the following field:

(1) Clinical diagnosis of skin diseases and syphilis.

(2) Dermatologic therapeutics including modern therapy of syphilis.

(3) Laboratory diagnosis—clinical microscopy including dark-field examinations, mycology, microscopic changes and serology.

(4) Physical therapy: (*a*) roentgen rays, (*b*) radium and radon, (*c*) ultraviolet radiation, (*d*) refrigeration, (*e*) electrolysis, (*f*) surgical diathermy, heat, cautery, etc.

(5) Minor surgery.

The number of rooms, amount of equipment and detailed character of work done will depend on conditions.

The point to be emphasized is that the dermatologist should be an expert in the use of every method of treatment employed in the specialty. Such a person will be resourceful and unprejudiced, and he will

be able to select with excellent judgment the therapeutic method or combination of methods best suited to the individual case.

Many practitioners prefer to have most of the technical laboratory work, especially that pertaining to serology, microscopic changes, blood chemistry and similar work, done in institutions with which they are associated, or by independent laboratories. Minor laboratory work, such as dark-field examinations, microscopic examinations for fungi and similar examinations should be conducted in the office. The practitioner must, of course, be acquainted with laboratory technic, and it is important for him to be able to interpret the results, especially in relation to the clinical observations.

The surgical ability of the average dermatologist is likely to be limited, but he should at least be able to excise small cutaneous lesions and skilfully to employ electrodesiccation and surgical diathermy. It is to be hoped that the future will develop dermatologists with a surgical bent who will take an interest in plastic surgery and legitimate cosmetic surgery. An increasing number of ethical surgeons are entering the field of plastic surgery, and dermatologists should support their efforts by referring cases to them.

It might be well, also, for dermatologists to take more interest in cosmetic dermatology. There is a place for the beauty specialist or so-called cosmetologist. It is not advisable for dermatology to include this field; but if dermatologists do not take any interest in conditions that are of only cosmetic importance, patients are forced into the hands of unethical and unscrupulous physicians, or into hands of persons who have no medical knowledge. The borderline between dermatology and cosmetology is not sufficiently clear to the general public, and there is no legal or recognized standard for the cosmetologist. It might be a good idea for this association, in cooperation with the Section on Dermatology and Syphilology of the American Medical Association, to suggest a definition and standard for the beauty specialist.

The dermatologist who is well established in this modern type of practice is a busy person, and he shoulders a heavy financial, moral and legal responsibility. In spite of the strain on his time and health, he is willing to make considerable sacrifice for charity, pedagogy and research. The building of American dermatology to its present position has been accomplished mostly by men of this type.

INSTITUTIONAL PRACTICE

While a number of American dermatologists have earned international recognition, comparatively few of our dermatologic institutions and departments have gained enviable reputations. They all have done the best they could under the usual political difficulties and with insufficient financial support, and some have accomplished a great deal. It

would, of course, be ideal to have a large, adequately endowed dermatologic center where all financial classes of patients could receive modern diagnostic and therapeutic care, where extensive research might be conducted and where a physician could receive training in every phase of dermatology and syphilology. Accommodation for private patients is of importance because general hospitals and sanatoriums are not properly equipped for the care of patients afflicted with skin diseases, and most of them prefer not to admit such patients.

With few exceptions, our best dermatologic centers consist of departments in medical colleges. Some of these departments have been successful in spite of discouraging conditions. One of the most severe handicaps is lack of money. The budgets range from nothing to a considerable amount, but they are seldom adequate. Other handicaps consist of separation of syphilis from dermatology, refusal to permit dermatologic jurisdiction or supervision over types of physical therapy, surgery and laboratory work that are peculiar and essential to dermatology. In some instances the department of dermatology has lost its identity by being placed under the department of medicine. Under these conditions, it is difficult to handle our subject in a comprehensive and satisfactory manner. Such treatment makes of dermatology a minor specialty indeed, and evolution of the specialty is retarded.

The blame for most of these handicaps can be placed on institutional policy and politics; but they are also caused by our own lethargy. Some Grade A medical colleges are indifferent to dermatology. Such indifference is increased when the heads of dermatologic departments fail to take an interest in the modern management of syphilis, pathologic histology, physical therapy, surgery, laboratory diagnosis, research work, etc.

The general scope of work to be attempted in a department of dermatology and syphilology in a medical college may be divided into the following items, in order of importance:

(1) Clinic (diagnosis and treatment of skin diseases).

(2) Teaching.

(3) Medical research.

The clinic is given first place because there must be clinical material; otherwise teaching and research work is seriously handicapped. But it should be borne in mind that the primary object of a dispensary is the diagnosis and treatment of disease. This fact is too often overlooked by both clinicians and research workers, especially the latter. Pedagogy is placed ahead of medical research because it is the primary duty of a medical college to educate students in the art and science of practical medicine. Research is of the utmost importance, and any attempt

to place medicine on a more scientific basis is to be applauded; but it seems unwise and unnecessary to transform a medical college into a research institute.

If it is assumed that the scope is to be as outlined in the foregoing, the department may be organized along one of two plans: (1) general centralization, and (2) complete dermatologic unit. The second plan offers the most for the future of dermatology, for the patient, for the student and for research; especially is this true in localities in which it is possible to obtain a large number of patients and an adequate number of assistants. At times it is necessary or advisable, for various reasons, to utilize a combination of both plans. The unit plan, fortunately, is gaining in popularity. It has many advantages. In such a department it is possible to instruct the postgraduate student in a most comprehensive manner, and to have as instructors men who are selected not only because of their general knowledge of dermatology, but because of special training in the numerous subdivisions of this specialty. The aim should be to cover every phase of dermatology and syphilology for the benefit of the patient, the student and for the future of American dermatology.

For economic, political and other reasons, many institutions insist on general centralization, and in a broad sense it is the logical method for the institution as a whole. Too much centralization, however, is often worse than too little. In case of complete centralization, the department of dermatology will be about as important as it was fifty years ago. Under such a scheme, if the patient requires treatment other than topical remedies, or diagnostic methods other than visual inspection, he is referred to other departments. The student must obtain instruction in several different departments or even in other institutions. There is no dermatologic supervision, and no control over patient or student. The various departments are busy with their own work, and they are usually short of money. For these reasons patients and students referred from the department of dermatology are apt to be neglected. Furthermore, the director and assistants of the various departments have no knowledge of dermatology, and it is too much to expect them to recognize the importance of, or to welcome, a large amount of routine work from the dermatologic department. There are, of course, exceptions. It is absolutely necessary to refer some kinds of work to other departments. Regardless of how complete the dermatologic unit may be, there must be cordial and efficient interdepartmental cooperation in order to obtain the highest degree of success in research work, diagnosis, therapy and teaching. It has been my experience that such cooperation is possible and that a reasonably complete dermatologic unit will not seriously antagonize other departments.

A brief outline of a department of dermatology in a modern medical school is now to be considered. The sketch is partly conceptional, but it is based mostly on the existence of several fairly complete units of this kind.

1. Syphilis: Many articles have been written which give logical arguments for the inclusion in dermatology of syphilis as a subject. Time will not permit reiteration of these arguments. There is approximate unanimity of opinion on this question among dermatologists. Syphilis as a subject should be under the general supervision of the department of dermatology, with the cooperation of many other departments in which there is expert knowledge of special features of the disease.

2. Physical Therapy: Roentgen rays constitute an almost indispensable remedy in dermatology. There are more than eighty dermatoses that are more or less amenable to this agent. A large proportion of the patients receive such treatment. The physician who administers or supervises this modality should be both a dermatologist and a roentgenologist. Superficial roentgen-ray therapy was developed by dermatologists, and it should always remain a definite part of the speciality.

In addition to roentgen rays, the physical therapy branch of the unit should include radium, radon, ultraviolet radiation, electrolysis, electrodesiccation, cautery, refrigeration and, in fact, any physical method that is useful for the treatment of patients with diseases of the skin. It might be interjected that it is no longer necessary to purchase large amounts of radium element.* It is now possible to rent radium emanation (radon) by the hour or day in any quantity, at a price that is within the means of dispensary patients.

3. Laboratory: There should be a laboratory suitably equipped for dark-field examinations and other minor forms of bacteriology and mycology, and also for microscopic study. The microscopic changes in diseases of the skin are neglected by general pathologists; they have been developed by dermatologists and are an integral part of the speciality.

4. Surgery: It is well to have a small but well equipped operating room for biopsies and other minor operations.

5. Beds: A department that has a hospital ward has a tremendous advantage over one with only ambulatory facilities. Hospitalization permits the control, treatment and study of patients with diseases that cannot be handled in the dispensary. Beds are essential, of course, for lumbar puncture, the malarial treatment of general paralysis, plastic operations and other conditions.

6. Miscellaneous: A teaching room is necessary. A photographic studio is advisable. Social service is invaluable.

7. Personnel: The unit is divided into branches. Each branch is under the supervision of a dermatologist who has received special training in that particular branch. It is my opinion that the director of the department should be a dermatologist who is a recognized clinician, but who also has an investigative propensity and who is a good organizer.

8. Budget: The overhead will depend on the size of the organization and on the amount and type of work done. There will be salaries for nurses, technicians and clerks. Repairs, new equipment, and other improvements will add to the expense. The overhead is high even without salaries for physicians. It is often necessary and it is possible, especially in large centers, to obtain a group of efficient, enthusiastic dermatologists who will work for the common good without receiving salaries. Comparatively few institutions, whether supported by public or private funds, are financially able or willing to provide an adequate budget for a modern dermatologic department. In the absence of such a budget, the department may be made partly or wholly self-supporting by contributions from patients. Deficits must be met by the institution, by the medical staff or by donations obtained from various sources.

The foregoing outline is for an organization designed for routine practical work—diagnosis, therapy and teaching.

Research: There are, of course, various kinds of research. Here we are concerned only with what may be termed clinical research and laboratory research. It is doubtful if one is much more important than the other. Future progress in dermatology, and in many other branches of medicine, will most likely be greater if the two types of research are coordinated. Many of the problems of medicine develop in clinical medicine, and many results of laboratory research must be finally investigated and tested by clinicians. That laboratory research is possible through interdepartmental cooperation has been demonstrated by Fordyce, Wile, Stokes and others.

That extensive creative research can be conducted by clinicians who earn their living by practicing dermatology, with little help from medical colleges or other institutions, has been demonstrated by Schamberg. General medical research is being conducted in innumerable institutions and also by independent physicians, much of which is important to dermatology. The programs of dermatologic meetings should include papers that will keep clinical dermatologists in touch with what is going on in the laboratories.

Teaching of Dermatology: There is a tendency in some Grade *A* medical colleges to discontinue instruction in dermatology to under-

graduate students. This is not discrimination; it is part of a general policy. If I have been correctly informed, the intention is to give the undergraduate student a training in the basic medical sciences, leaving the art of medicine, and instruction in the specialties, to postgraduate courses. Such a policy has advantages, but it seems too extreme. Most medical students become general practitioners, and they are about 28 years of age when they enter practice. The more practical knowledge they have in the beginning, the better for the public and for themselves.

It is my opinion that the undergraduate medical course should include compulsory instruction in dermatology. Certainly the physician who begins the practice of medicine should be familiar with cutaneous cancer and the precancerous dermatoses. No one will deny the importance of early diagnosis and adequate treatment of patients with cancer and syphilis. This cannot be accomplished by science alone. It is advisable for many reasons for the undergraduate student to have a practical knowledge of the common dermatoses. Both undergraduate and postgraduate teaching should be conducted for the most part by dermatologists who are expert clinicians and who have teaching ability. It is instructive to observe the keen interest taken by undergraduate students when the course in dermatology is a good one, even when such a course is optional; and, also, the lack of interest when the course is a poor one. The same statement may be made relative to postgraduate instruction. The didactic lecture still has value, but best results are obtained by conferences, discussions, presentation of clinical material, moulages and lantern slides.

There has been a great deal of discussion relative to the merits of full-time positions for heads of clinical departments of medical colleges. Time will not permit a review of the arguments for and against such positions. The system has definite advantages and to some extent it has been successful. The disadvantages, however, are so numerous and pertinent that the consensus is in favor of half-time service or of volunteer service for the heads of clinical departments. Full-time positions are often desirable for research workers, although many physicians in this class prefer half-time positions and for good reasons. Salaried departmental positions for young physicians who intend to specialize in dermatology are advantageous. A better system, however, is for the physician to obtain his training by devoting half of his time to the department and the other half to the private office of a dermatologist who has a large, modern practice. Guidance and training are invaluable for a while. Accumulation of knowledge and experience will lead to independence of thought and action.

During the past decade, most of the young dermatologists in this country have been trained here, and not infrequently by teachers who did

not study on the other side of the Atlantic. A large amount of research work has been done, and it is improving in amount and character. Practical dermatology has been highly developed. Numerous men have gained international reputations. The profession in the United States is more independent of foreign dermatology. Such, in brief, constitutes the American school of dermatology.

In addition to an increase in the amount of clinical and laboratory research, as Pusey stated some time ago, numerous monographs are required, and it is to be hoped that one of these will be entitled "The History and Evolution of Dermatology." It is unfortunate that some believe that dermatology begins with the present generation. Accomplishments of the past are as great as those of the present and future. The achievements of every generation soon become obsolete. But the present generation owes its knowledge to those who worked hard and who gave freely. They possessed the pioneer spirit, the spirit of service, and the will to succeed. An appreciation of such men and of their work inspires incentive and humility.

I wish that it were possible to elaborate on many of the subjects that I have barely mentioned. I have already occupied too much time and must grant the floor to those who have more important subjects to discuss. As I stand here, I see many of the older men for whom I have reverence. I see also younger men of whom I am proud. A number of them were my pupils. You are all my friends. It is an overwhelming honor to be the president of the oldest and one of the most distinguished dermatologic associations of the world. It is with awe and humility that I lift the gavel that has been in the hands of my beloved teachers and masters of American dermatology. I am full of appreciation. I thank you.

RAYNAUD'S DISEASE

REPORT OF TWO CASES COEXISTING WITH OTHER DERMATOSES (DERMATITIS HERPETIFORMIS, LUPUS ERYTHEMATOSUS)

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The two cases of Raynaud's disease to be reported in this paper, apart from their unusual dermatologic accompaniments, do not depart greatly in their clinical appearance and history from the typical case, but are unusual in respect to the age of the patients and their physical make-up.

The association with other dermatoses may be merely coincidental, or there may be a causal relationship. I believe the latter is the case. While the disturbance of vasomotor innervation is accepted as the essential common feature of all cases correctly diagnosed as Raynaud's disease, it is believed that the fundamental cause is toxemia. Toxemia, generally of bacterial origin, is commonly considered to be the chief etiologic factor in dermatitis herpetiformis and lupus erythematosus, and the reports following describe cases of these diseases accompanied by the clinical phenomena of Raynaud's disease.

Barlow,[1] in his appendix to the English translations of Raynaud's original thesis, mentions urticaria and scleroderma, which he apparently observed several times in association with Raynaud's disease. Other writers also have reported scleroderma in their cases, and Wedrow[2] records lupus erythematosus occurring with Raynaud's disease. Apart from these, I have not been able to find in the literature at my disposal reports of any other dermatoses in connection with Raynaud's disease.

REPORT OF CASES

CASE 1.—*Raynaud's disease developing in the course of dermatitis herpetiformis.*

History.—M. F., a carpenter, aged 40, had an itching eruption, with pimples and blisters, all over his body. Papules in groups had appeared on the upper part of the trunk and on the arms three years previously. They enlarged rapidly and became vesicular, and some reached the size of bullae. When ruptured they discharged fluid, at first clear but later purulent. This was followed by crusting; after healing, pigmentation and scarring remained. There were remissions and exacerbations of the eruption but never entire disappearance, and it was worse in hot

1. Raynaud, Maurice: On Local Asphyxia and Symmetrical Gangrene of the Extremities, translated by Thomas Barlow, New Sydenham, Soc. London, 1888, appendix by the translator.

2. Wedrow: Russki Westnik Dermatologii, vol. 3, no. 7; Dermat. Wchnschr. **81**:1847 (Dec. 19) 1925.

weather. Itching was intense at the site of the lesions just before their rupture, which occurred independent of trauma, although the patient often clawed them open. The spread to the head and neck, forearms and lower limbs was gradual, by development of new lesions singly, or in groups. At times there was swelling of the hands and arms, legs and feet, to such a degree as to prevent the patient from putting on his clothes. At such times he felt slightly ill, and, for this reason, he had not been able to work continuously. His wife related that if she chanced to get any of the discharge in a cut or scratch on her own hands while dressing any of his open lesions, she would get "blood poisoning," with symptoms characteristic of local cellulitis and lymphangitis. This had happened on two or three occasions.

The patient was born in Scotland. He lived some years in the Transvaal, and left it twenty years ago; he then went to New South Wales, and spent eleven months there before going to British Columbia, where he remained since that time. He had rheumatic fever while in Africa, and a second time thirteen years before he consulted me. He was quite positive that he had never had malaria. He had pneumonia eleven years ago and measles four years ago. His habits were temperate, and any history that might indicate venereal infections was not obtained. His wife had never been pregnant or ill.

Examination.—Development and nutrition were moderately good. The skin of all regions, with the exception of the palms, soles and anterior and lateral parts of the scalp, showed an eruption consisting of papules varying in size from that of a pinhead to that of a large pea. Many were excoriated and surmounted by blood crusts, or were oozing small amounts of yellow serum or blood. Mixed with them were papulovesicles and vesicles mostly of small size. Many of these lesions developed on a small, slightly infiltrated, pink macule or wheal, which survived as an areola. Old healed lesions were marked by pigmented macules of a pale brown to bluish color. On the forearms and neck, which were tanned, these were replaced by corresponding areas of depigmentation. In some situations, as on the inner side of the thighs, there were circular pigmentations. The eruption was most profuse on the dorsum of the trunk, the upper part of the thorax, the lower part of the abdomen in front, the forearms, the hands and the neck, and the tendency to grouping was definite. The buccal mucous membrane apparently was normal. The postauricular, cervical, axillary, infraclavicular, epitrochlear, inguinal and femoral lymph nodes were enlarged, varying in size from that of a pea to that of an almond, and were firm in consistency and nonadherent, but not tender. The blood pressure was 150 systolic and 75 diastolic; the pulse rate and the temperature were normal. Examination of the cardiovascular system and the respiratory system, including a roentgen-ray examination of the chest, did not reveal any abnormalities, with the exception of a considerable deflection of the nasal septum and a slight congestion of the larynx and pharynx. The area of splenic dulness was increased, but the spleen was not palpable. The abdomen was otherwise normal. There was extensive pyorrhea, but no dental caries. Repeated Wassermann tests and blood cultures over a period of two years were negative. Periodic examinations of the blood and urine were carried out. There was a slight, but fairly constant trace of indican, occasionally a faint trace of albumin and rarely hyaline casts in the urine. There were slight anemia and leukocytosis varying from 9,000 to 12,000. The differential count showed lymphocytes increased at times from 40 to 45 per cent, eosinophilia as high as 8 per cent and a corresponding relative polymorphonuclear reduction.

Treatment and Course.—Sedative applications were prescribed, and following general ultraviolet radiation and a course of autohemotherapy, the itching rapidly

subsided and has not recurred in two years. The great majority of the lesions involuted rapidly, but there have been occasional flare-ups over localized areas, and on several occasions during the first three months of treatment, groups of three or four large flaccid bullae appeared in various locations. On two occasions during the first ten months, there was sudden swelling of the cervical lymph nodes and parotid glands, great enough to resemble mumps; this was accompanied by moderate elevation of temperature and malaise, which subsided in three or four days. On one occasion the right wrist and hand developed a diffuse, brawny swelling with some pain and stiffness and a slight increase in the surface temperature, but without general disturbance. There was steady improvement in the patient's general condition; his weight increased, he slept normally, and he was able to resume work. The rate of improvement of the skin condition slowed down to an almost complete standstill by the end of the first twelve months. After this, a few fractional doses of the roentgen ray were tried without apparent benefit. The administration of solution of potassium arsenite (Fowler's solution) by mouth, increased to the point of producing looseness of the bowels, appeared to have an unfavorable effect. Early in the second year a course of eight injections of 0.3 Gm. of neoarsphenamine was given; following the last injection, a diffuse eruption, consisting of a minute papular rash, appeared on the trunk and extremities and was accompanied by a slight pruritus. This eruption cleared up quickly, and at the same time, there was a noticeable clearing up of the lesions of the original disease. Since then, the only local measures employed have been ultraviolet radiation and local applications. The patient has continued to make slow but steady improvement.

Exactly one year after he was first seen, the patient showed me the right middle finger, which was of cadaveric coldness and pallor in the middle and terminal phalanges. He said that about five days previously it ached and felt cold at night and in the morning. At the tip, it felt to him as if he had run a splinter into it. There were three or four small, brown, petechia-like spots on the end of the finger which appeared to be quite insensitive. Three or four days later, the superficial layers of epidermis peeled off over the brown spots. For the next month, there were alternating periods of whiteness and coldness and periods of normal appearance. Six weeks later, all of the finger tips of the left hand were a dusky bluish color, were cold to the touch and had impaired sensation. This was most pronounced in the index and little fingers. It is especially to be noted that this commenced in July, but questioning elicited the fact that during the preceding spring he had been bothered more with coldness of the finger tips than ever before. Cyanosis or pallor occurred and recurred and continues to do so in most of the fingers and it is accompanied by the development of small patches of dry gangrene. This has been the situation for a year, and during this time thickening of some of the nails has developed, and characteristic nutritional changes in the bones have occurred. There can be little question as to the diagnoses in this case. Both the dermatitis herpetiformis and Raynaud's disease appear clinically to be typical. Otherwise it is noteworthy that the patient is far from being of the neuropathic type; his reflexes were tested and found to be normal, and there were no sensory disturbances except in his finger tips. His habits were phlegmatic to the point of lethargy, both bodily and mental.

CASE 2.—*Raynaud's disease with lupus erythematosus.*

History.—Mrs. A. B., aged 68, a housewife, first seen in February, 1927, complained chiefly of pain and soreness in finger tips. She said that for some months the ends of some of the fingers had been getting blue and cold much of the time. More recently they had been becoming tender as well, and at times appeared

swollen. Finally, a few weeks before she consulted me, small ulcerations had appeared which were followed by adherent brownish crusts. About the same time, she noticed a scaly eruption on the face, particularly on the forehead; there was also an eruption on the nose, and a small spot on the right cheek which was sore and tender.

The patient was born and has always lived in Canada. She had two pregnancies, and the two children were living and well. Her attendant physician informed me that ten years ago he removed condylomata acuminata from the labia majora and noted some vaginal excoriations which bled on scraping. The Wassermann test at that time was negative.

Examination.—The patient looked the stated age and appeared healthy. Physical examination did not reveal any abnormalities except the conditions of which she complained. Varicose veins of the leg were not present. There were neither tortuous vessels nor visible pulsation in the temples, and the wall of the radial artery was not perceptibly thickened. The blood pressure was 140 systolic and 85 diastolic. The Wassermann reaction was negative, and albumin or casts were not seen in the urine. The reflexes were not exaggerated, and, while she was mentally alert and active, she was decidedly not neuropathic. The fingers appeared uniformly slightly swollen, but normal in color. The middle finger of each hand and the left index finger were extremely tender; the lightest touch could hardly be tolerated. The skin appeared tense, and on palpation gave the sensation of being thickened. The nails appeared slightly loosened in their beds. At the extreme tip of these fingers, there were small depressions showing loss of substance, and they were partially filled with adherent brown crusts. These finger tips were cooler than the others. The tip of the right ring finger was decidedly paler than that of the other fingers. All nails showed longitudinal striation and ridging. At the tip of the right little toe, close to the nail, was a small, pale brown spot, which was tender. The patient said it had felt sore for some time, and she thought it was a corn. There was no hyperkeratosis or sign or trauma, but the spot had the petechia-like appearance mentioned in the previous case.

The forehead showed a diffuse dry scaliness, with an irregular blotchy erythema. The nose was slightly reddened and studded with small round scales, varying in size from that of a pinhead to that of the head of a tack. On the right cheek, about an inch from the nose, was a round, pink spot, about seven to eight millimeters in diameter, slightly elevated and infiltrated. It was almost covered by a centrally attached thin scale or crust. Removal of this scale showed projections from its under surface and disclosed gaping follicular orifices which oozed slowly. Scales removed from the nose were of similar appearance. There was no greater degree of telangiectasia than one is accustomed to see in such situations at the age of the patient; there were, however, small but distinct atrophic scars on the forehead and nose. The changes in the skin of the face appeared to have been in progress longer than the patient's statements indicated.

One month later, the crusts had separated from the finger tips, leaving small linear cicatrices.

Treatment and Course.—Daily massage with warm olive oil and the administration of small doses of thyroid and calcium lactate, with a sulphur and salicylic cream for the face, has been the only treatment employed. At the time of writing, two months after the commencement of the treatment, there are no subjective symptoms of which the patient complains, the condition of the fingers appears to be stationary for the time, and the appearance of the face is much improved.

These two cases have certain features in common. Both patients are above the age in which the incidence of Raynaud's disease is greatest. Neither one can be called neuropathic. In neither is there a history of exposure to exceptional cold by reason of climatic environment or occupation. Both have an additional malady, which is commonly recognized as being the result of toxemia, usually from some distant focus of infection. It is reasonable to deduce from this that toxemia is the predominant factor in producing the vasomotor derangement which is the essential feature of Raynaud's disease.

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BLOOD SERUM CALCIUM IN THE URTICARIAS

WITH A NOTE ON EPHEDRINE THERAPY *

SIGMUND S. GREENBAUM, M.D.

PHILADELPHIA

This study had for its objects: (*a*) An evaluation of calcium therapy in the urticarias as based on the blood serum calcium content; (*b*) An inquiry, as based on certain changes in the blood, into the tendency to group all urticarias among allergic phenomena; (*c*) An evaluation of ephedrine therapy in urticaria.

Calcium salts in the treatment of adult urticaria and, more particularly, the urticarias of serum sickness, are advocated by a number of authors. Certain observers claim for them, especially in the latter forms, not only curative but also definite prophylactic properties. In the Handbook of Therapy,[1] calcium is advocated in those instances in which simple measures—diet and alkalinization—fail, and in the giant urticarias. These are the types with which the dermatologist ordinarily comes in contact. Again, it is stated that the relationship of diminished blood serum calcium to some angioneurotic edemas and to some of the urticarcia-like swellings and edemas has been shown, and it seems to be a clinical fact in many cases that these exudates and symptoms of anaphylaxis are prevented or are quickly improved by the administration of calcium.

Although most textbooks, particularly those on diseases of the skin, mention calcium in the treatment of the urticarias, including Quincke's disease, this appears to be the result of custom or empiricism rather than scientific fact. A search through the literature for studies on the calcium content of the blood as related specifically to the urticarias has not revealed many data. In fact, in so far as urticaria papulosa is concerned, there were none at all. With respect to the calcium content, the reports are contradictory, while the reports on coagulability are extremely meager.

LITERATURE

Wright [2] was the first to use and advocate the internal administration of calcium salts in urticaria. He based this therapy on the fact

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* Read before the Section on Dermatology and Syphilology at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 17, 1927.

* From the polyclinic laboratories of the Graduate School of Medicine of the University of Pennsylvania and the clinic of Dr. J. Frank Schamberg.

1. Osborne, O. T., and Fishbein, Morris: Handbook of Therapy, ed. 7, The American Medical Association, Chicago, 1923, p. 531.

2. Wright, A. E.: Brit. J. Dermat. **8**:82, 1896.

that in all conditions of diminished blood coagulability, there is a tendency to serous hemorrhage and urticaria. Later, he suggested that urticaria was due to a diminution in the calcium content of the blood serum.

Ten years later, Paramore [3] made an experimental study of eight cases of urticaria with the object of determining the content of the blood in lime salts and the possible rôle they played in the production of urticaria. His conclusions were that there was a definitely defined form of urticaria which he termed decalcification urticaria or urticaria due to deficiency in blood calcium. In 1914, White [4] made a clinical study of the effects of calcium in twenty-three cases of urticaria. Favorable results were obtained in twelve patients. His belief in this form of therapeusis was strengthened by certain articles appearing in the literature, among which was one by von den Velden, who stated that blood calcium is usually deficient in the presence of skin eruptions due to anaphylaxis. He concluded that, although not specific, calcium should be tried in all cases of obstinate urticaria. In published studies of Pusey at that time this treatment was regarded as unfavorable.

Until three years ago, these studies constituted the only ones directed specifically to blood serum calcium in the urticarias. In 1924, Schamberg and Brown [5] included in their studies of the inorganic salts of the blood in patients with various dermatoses six patients with urticaria, in four of whom the condition was acute. The tests in their patients, so far as a decrease in serum calcium was concerned, were negative, as were those of Briggs [6] in one case. Several months later, Schwartz and Levin [7] reported their studies on blood calcium in various diseases of the skin. Thirteen of their patients had urticaria; only one of these gave a low blood calcium, and the remainder were normal. According to Pulay,[8] however, concentrations of calcium in the blood serum in the urticarias vary; he believes that some urticarias are favorably influenced by calcium therapy, particularly chronic urticarias of the vagatonic type, in which he stated that there is a decreased blood serum calcium. Anaphylactic types are treated in a similar manner.

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3. Paramore, W. E.: Brit. J. Dermat. **18**:239, 1906.

4. White, C. J.: J. Cutan. Dis. **32**:691, 1914.

5. Schamberg, J. F., and Brown, H.: Inorganic Salts in Blood in Psoriasis and in Certain Other Dermatoses, Arch. Dermat. & Syph. **9**:368 (March) 1924.

6. Briggs, A. P.: J. Biol. Chem. **57**:351, 1923.

7. Schwartz, H. J., and Levin, O. L.: Calcium Content of Blood in Various Diseases of the Skin, Arch. Dermat. & Syph. **10**:544 (Nov.) 1924.

8. Pulay, E.: Ekzem und Urticaria, Urban & Schwarzenberg, Berlin, 1925.

METHOD OF ANALYSIS AND RESULTS [9]

The method used for the determination of calcium was that of Clark and Collip [10] and was made on not less than 2 cc. of blood serum. The stated normal range with this method is said to be from 9 to 11 mg. per hundred cubic centimeters of serum, although in my ten normal controls it ranged from 10.5 to 13 mg. per hundred cubic centimeters of serum (table 1). It will be noted in table 2 that the studies included cases of acute urticaria, in some of which there were several different known causes; erythema multiforme, in which some urticarial elements were present; chronic and giant urticaria and urticaria papulosa. In spite of the fact that several were of the so-called allergic type, in none of these was there evidence of a decreased blood serum calcium; in slightly less than half was there evidence of a diminished coagulability of the blood. The tendency was rather toward a high blood serum calcium and an increased coagulability. Bogg's method was used for estimating

TABLE 1.—*Determinations of Calcium According to Diagnosis (Controls)*

Number	Diagnosis	Serum Calcium
1	Acne vulgaris	13
2	Sycosis vulgaris	11.3
3	Alopecia areata	11.4
4	Latent syphilis	11
5	Latent syphilis	12.5
6	Latent syphilis	12.5
7	Acne vulgaris	12.8
8	Tinea cruris	12
9	Epidermophytosis	10.5
10	Neurosyphilis	11

coagulation time. In all cases, including those instances in which coagulation time was not studied, it is interesting to note that the bleeding time was always low, clotting after needle puncture generally taking place quickly.

ESTIMATION OF VALUE OF CALCIUM THERAPY

In reviewing the question of the effect of calcium on vessel permeability, Loeb [11] has shown that this normal permeability is definitely related to a proper balance between the calcium and the sodium content of the blood, and that an excess of sodium increases it, whereas an excess of calcium decreases it. The results obtained by Wright, Paramore, White and others, although apparently based on false premises, indicate that favorable results may be obtained by the administration of calcium at least in some urticarias. It is certain that calcium, whether given orally or intravenously, does not have an unfavorable influence

9. The calcium determinations were performed by Mr. A. K. Keller, Jr., of the Biochemical Laboratory of the Graduate School.

10. Clark, G. W., and Collip, J. B.: J. Biol. Chem. **63**:461, 1925.

11. Loeb, L.: Medicine **2**:171, 1923.

TABLE 2.—*Data of Calcium Determination*

No.	Diagnosis	Coagulation Time	Serum Calcium	Comment
1	Acute urticaria	.....	13.4	
2	Acute urticaria	.....	12	
3	Acute urticaria	2½ minutes	13	Due to phenobarbital
4	Acute urticaria	.....	11	Serum sickness
5	Acute urticaria	.....	13	
6	Acute urticaria	45 seconds	13	
7	Acute urticaria	.....	12	
8	Acute urticaria	4 minutes	12	
9	Acute urticaria	.....	11.5	
10	Acute urticaria	.....	12.7	
11	Acute uritcaria	.....	12.5	
12	Acute urticaria	2 minutes	14.5	Serum disease; blood calcium was 11.5 before antitoxin was given
13	Acute urticaria	3 minutes	14 15 12.9 14.9 13 11.5 13.5	Due to cincophen; slight variation in 12 hour specimens following epinephrine, 7½ minims, every four hours for six doses; seven estimations
14	Acute urticaria	.....	10.5	
15	Acute urticaria	4 minutes 2½ minutes 3 minutes 2½ minutes	12.7 12.5 13.5	Due to cincophen; three daily estimations of calcium and four of coagulability
16	Acute urticaria	1 min. 20 sec. 4 minutes 4 minutes	13	Malarial urticaria; daily coagulation time for three days
17	Acute urticaria	4 minutes	13.5	
18	Acute urticaria	.....	12	Third day of serum disease; estimation made after about twenty subcutaneous injections of epinephrine
19	Acute urticaria	.....	11	First day of serum disease; after three doses of epinephrine
20	Subacute urticaria	3 minutes	13	
21	Subacute urticaria	.....	17	
22	Subacute urticaria	4 minutes	12.6	
23	Subacute urticaria	.....	13.9	
24	Subacute urticaria	2½ minutes	10.5	
25	Subacute urticaria	.....	8.3 7.7	Two estimations of calcium; repeated epinephrine gave relief
26	Chronic urticaria	.....	16.8	
27	Chronic urticaria	.....	13.4	
28	Chronic urticaria	3½ minutes	13	
29	Chronic urticaria	.....	13	
30	Chronic urticaria	1 minute	12	
31	Chronic urticaria	.....	12	
32	Chronic urticaria	4 minutes	13	
33	Chronic urticaria	.....	12.5	
34	Chronic urticaria	.....	13.5	
35	Chronic urticaria	.....	13	
36	Chronic urticaria	.....	12	
37	Chronic urticaria	.....	13.9	
38	Chronic urticaria	.....	12	
39	Chronic urticaria	.....	12.5	
40	Giant urticaria	.....	10.5	
41	Giant urticaria	.....	12.7	
42	Erythema multiforme	.....	12.5	Urticarial elements
43	Erythema multiforme	.....	12	Urticarial elements
44	Erythema multiforme	.....	12	Urticarial elements
45	Erythema multiforme	.....	12.5	Urticarial elements
46	Urticaria papulosa	2½ minutes	13	
47	Urticaria papulosa	2 minutes	13	
48	Urticaria papulosa	3½ minutes	14.5	
49	Urticaria papulosa	1 minute	16.5	
50	Urticaria papulosa	.....	13.8	
51	Urticaria papulosa	½ minute	14	
52	Urticaria papulosa	3 minutes	13.4	
53	Urticaria papulosa	.....	15	
54	Urticaria papulosa	2 minutes	13	
55	Urticaria papulosa	2 minutes	13	
56	Urticaria papulosa	45 seconds	14	
57	Urticaria papulosa	.....	12.5	
58	Urticaria papulosa	30 seconds	11.5 12.5	
59	Urticaria papulosa	30 seconds	14	
60	Urticaria papulosa	30 seconds	13	
61	Urticaria papulosa	1½ minutes	15	
62	Urticaria papulosa	4 minutes	13	
63	Urticaria papulosa	5 minutes	9	

Calcium chloride given intravenously in itchy urticarias, to which the majority belong, leads to only temporary relief, probably because the pruritus is replaced by a general sensation of heat.

The fact that the blood serum calcium in my cases was either normal or increased does not necessarily indicate a calcium sufficiency at the moment when the urticaria actually began. It is possible that it represents a protective effort on the part of nature, particularly since vessel permeability appears to play an important part in the production of the wheal. It has been stated that epinephrine, the best drug for urticaria so far as symptomatic relief is concerned, causes a reduction in the blood calcium. In one of my patients in whom estimations were made daily following repeated injections of the drug, this observation was not confirmed.

From my results, it may be assumed that the blood is not ordinarily deficient in calcium, first, because urticaria commonly occurs in the healthiest of individuals, and, second, because a number of maneuvers, such as feeding thyroid substance, tend to increase the calcium content of the blood. Furthermore, according to Wells,[12] the feeding of calcium will not appreciably raise the blood calcium. In view of the foregoing statement, and a natural ability to concentrate the calcium in the blood of the organism in case of necessity, it would appear that their administration is useless. Although recent studies indicate that when calcium is given orally on a fasting stomach it elevates the level of serum calcium for extended periods of time, this would not alter the situation.

URTICARIA AND ALLERGY

The statement that urticaria and angioneurotic edema are always allergic and especially anaphylactic [13] in origin does not have general support, nor does it appear to be warranted by the facts. Some would even group the urticarias with eczema and erythema under the one term "allergic dermatitis." [14]

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12. Wells: Chemical Pathology, ed. 5.

13. Kolmer (Infection, Immunity and Biologic Therapy, ed. 3, p. 598) proposes the following classification for the phenomena developing in some people as a result of an unusual susceptibility to substances harmless in similar amounts to most people:

A. Hypersensitiveness (exciting agent non-protein in character)
- natural
- acquired

B. Anaphylaxis (exciting agent protein in character)
- natural
- acquired

14. Piness, G., and Miller, H.: Cutaneous Manifestations of Protein Allergy, Arch. Dermat. & Syph. **14**:145 (Aug.) 1926.

It is well known that the phenomena of allergy in the experimental animal include a decrease in, or a loss of, coagulability of the blood. However, few studies on this aspect of allergy have been made in the human subject. According to Kolmer,[15] the effects or anaphylaxis in man include a reduced coagulability of the blood. Shattuck [16] stated that he has demonstrated a delayed coagulation time in four out of five instances of chronic urticaria, and further claimed to have found that there is a marked delay in the coagulation time of the blood in patients having serum disease. Pagniez and Vallery-Radot [17] likewise found changes in the blood in chronic urticaria which closely agreed with those found in anaphylactic shock. These observations were believed by Low [18] to support the allergic theory of the causation of urticaria. However, Witzinger [19] found that a single injection of a foreign serum in man was followed by an acceleration in coagulability, which subsided in twenty-four hours only to reappear from the seventh to the tenth day. A second intoxicating injection was followed in from five to six hours by a marked retardation in coagulability. Likewise, Widal [20] and his collaborators found a state of hypercoagulability of the blood in a case of giant urticaria due to an animal food. An attempt was made to confirm Witzinger's observation. Two patients were each given 5 cc. of antistreptococcic serum and the blood coagulability determined daily for ten days, at which time a second dose of serum was given. The results are given in table 3.

In three cases of severe urticaria, Minot, Denny and Davis [21] found the coagulation time to be normal in two and delayed in one. It is known that both the symptoms and the pathologic changes of anaphylaxis vary considerably in different animals, although they are the same for any given species irrespective of the allergen. Since it is generally agreed that urticaria is only a symptom induced by many causes, it would appear safe to assume that the phenomena in man thought to be allergic should be uniform, at least in their humoral aspects. It is because of this that it is difficult to understand a decreased coagulability in the one instance, with a tendency to increase in the majority of instances. Nevertheless, the demonstration of a diminished coagulability of the blood in some urticarias justifies the assumption that anaphylaxis

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15. Footnote 13, p. 605.

16. Shattuck, H. F.: Protein Intoxication, Arch. Int. Med. **20**:167 (Aug.) 1917.

17. Pagniez et al.: Presse méd. **14**:529, 1916.

18. Low, R. Cranston: Anaphylaxis and Sensitization, Edinburgh, W. Green and Son.

19. Witzinger, Q.: Ztschr. f. Kinderh. **3**:211, 1911-1912.

20. Widal et al.: Bull. et mém. Soc. méd. d. hôp. de Paris **37**:256, 1914.

21. Minot, G. R., et al: Coagulation, Arch. Int. Med. **17**:101 (Jan.) 1927.

is at least one cause of urticaria. On the other hand, the results in my cases would appear to indicate that too much importance has been placed on allergy as a cause of urticaria, and these studies are supported by the clinical ones of Schloss,[22] who secured positive cutaneous reactions in tests with food proteins in only ten out of fifty cases of chronic urticaria. In three of my acute cases—two due to cincophen and one to antitoxin—the tendency of the blood to coagulate was decidedly increased rather than diminished. Furthermore, a decrease in coagulability connotes a decrease in blood calcium, and this was not present in any of my patients. The urticarias due to drugs and serums are generally grouped with the allergies. In fact, serum disease is considered the best example of human anaphylaxis. These urticarias generally represent the acute types, and therefore those more closely like allergic shock. If these

TABLE 3.—*Effect on Coagulability of the Blood of Two Injections of Serum Given at Ten Day Intervals*

	Coagulation Time	
Date	Case 1	Case 2
March 16, 1927	First injection 5 cc. serum	First injection 5 cc. serum
March 17, 1927	3 minutes	3 minutes
March 18, 1927	4 minutes 10 seconds	4 minutes 10 seconds
March 19, 1927	3 minutes 30 seconds	3 minutes 30 seconds
March 20, 1927	3 minutes 30 seconds	3 minutes 30 seconds
March 21, 1927	3 minutes 45 seconds	3 minutes 45 seconds
March 22, 1927	4 minutes	4 minutes
March 23, 1927	3 minutes	3 minutes
March 24, 1927	3 minutes 10 seconds	3 minutes 10 seconds
March 25, 1927	—	—
March 26, 1927	Second injection 5 cc. serum	—
March 27, 1927	—	—
March 28, 1927	1 minute	Second injection 5 cc. serum
March 29, 1927	30 seconds	3 minutes
March 30, 1927	Immediate	—
March 31, 1927	Immediate	30 seconds
April 1, 1927	4 minutes 30 seconds	3 minutes
April 2, 1927	4 minutes 30 seconds	—

represent allergic reactions, then coagulability of the blood in such conditions in man is directly opposite to that seen in the experimental animal.

EPHEDRINE IN URTICARIA

Experimental studies[23] with ephedrine, recently introduced into American medicine, would indicate that it is closely related, both physiologically and chemically, to epinephrine, with effects which are not as intense, although less toxic; it is more prolonged in its action and has the additional advantage of being effectively absorbed from the intestinal tract. The value of epinephrine in the control of the subjective symptoms of urticaria is so well known that the possibilities of

22. Schloss, O. M.: Allergy in Infants and Children, Am. J. Dis. Child. **19**:445 (June) 1920.

23. Chen, K. K., and Schmidt, C. F.: Action and Clinical Use of Ephedrine, J. A. M. A. **87**:836 (Sept. 11) 1926.

ephedrine, with its preferable qualities, in a condition in which the dilated peripheral capillaries appear to play a major rôle were at once evident. Miller [24] reported the relief of subjective symptoms in one case of serum disease, and disappearance of the urticarial lesions in a second case.

As is well known, the prognosis in acute urticaria is generally benign, a matter of from several hours to several days. In those urticarias which persist longer than this and in which the severe pruritus is not controlled by the usual methods of diet and elimination, any drug possessing antipruritic properties is worthy of trial. Ephedrine is not a specific for urticaria. The varied etiology precludes this. With the foregoing reports in mind, my studies were limited to the subacute types of urticaria, in which the question of spontaneous improvement could be, to a large extent, discounted. The observations were made on eight patients seen in private practice whose symptoms, both subjective and objective, had persisted for from nine to twenty-one days. In most instances, the patients received from one to several injections of epinephrine, but not more than one daily. This was imperative as it gave temporary relief, allayed the patient's nervousness and obtained for me the cooperation of the patient. The dose was ¾ grain (0.048 Gm.) every three hours. Ephedrine does not cure urticaria, and it appears without effect on the wheals, which not infrequently continue to develop during its use, though they may not itch. It has appeared to me, however, that in conjunction with several doses of epinephrine, ephedrine had a definite influence on the pruritus, although these effects were not apparent for forty-eight hours. Ephedrine is an expensive drug and its use should be limited to the picked types of cases already noted, and as an adjuvant to epinephrine. It appears at least to help control the subjective disturbance until the cause either is found or is spontaneously eliminated.

SUMMARY

Estimations of calcium in the blood serum were made in sixty-three patients representing all forms of urticaria. In all but one, the results showed a normal or increased calcium. In slightly less than half the cases, coagulability of the blood was tested and a decrease was not found in any instance; rather, the tendency was toward an increase. Several cases ordinarily grouped as allergic showed an increased or normal coagulability. The indications for ephedrine therapy were studied in eight patients with subacute urticaria.

CONCLUSIONS

1. The administration of calcium salts to the majority of patients with urticaria lacks scientific basis.

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24. Miller, T. G.: Am. J. M. Sc. **170**:181, 1925.

2. The coagulability of the blood in the urticarias is not decreased in most cases; this is contrary to the coagulability that occurs in experimental allergic shock in animals.

3. In subacute cases of urticaria, ephedrine may be of value as an adjuvant to epinephrine; it may also be used when the patient's tolerance to epinephrine is low.

DISCUSSION

DR. UDO J. WILE, Ann Arbor, Mich.: Dr. Greenbaum's paper is extremely valuable from the side of its negative results. Blood chemistry has introduced itself into the field of cutaneous medicine, and doubtless a number of mistaken ideas are held. I believe the fact that a carefully made analysis in sixty cases of urticaria has not shown any increase in blood calcium should effectually close the possibility of urticaria being caused by deficiency in blood calcium. In regard to the effectiveness of calcium in these cases, there are a number of drugs that are continuously used in medicine for which there is no scientific explanation, but which seem to do good, and I would say that before one rejects the use of calcium in the treatment of urticaria, one would still have to do with the empiric good that may result from the use of the drug either intravenously or by mouth. It has been my custom ever since the alleged cause of urticaria was thought to be deficiency of calcium to use this drug, and I must say that occasionally the patients have improved. If there was any relationship between the symptoms and the improvement, it would have to be put down to empiricism. There is no question but that empiricism does exist, and there is no better example of this than the use of quinine in malaria, which is purely empiric, but which has excellent results.

DR. PAUL A. O'LEARY, Rochester, Minn.: At the Mayo Clinic, we have studied the blood chemistry in a similar group of patients with urticaria due to various causes, and have found that the blood calcium estimates closely paralleled those of Dr. Greenbaum. At the same time, we studied twelve other chemical constituents of the blood and found the results equally disappointing. My experience in the treatment of the urticarias has been akin to Dr. Wile's. In spite of the fact that no demonstrable increase or decrease in the blood calcium could be demonstrated, I have occasionally noted striking improvement in the urticarias following the administration of calcium lactate by mouth or calcium chloride by vein. More recently, a combination of calcium lactate, thyroid and parathyroid extracts has been used with occasional startling results. It is unfortunate that the results are so uncertain.

DR. EVERETT S. LAIN, Oklahoma City, Okla.: A small town practitioner, who practices empirically to a large extent, when treating skin diseases one day asked me whether I had ever tried arsphenamine in chronic urticaria. I said "no," though I had tried everything including calcium. He said, "Try it." Since that time I have had four cases of chronic urticaria in which I have used neoarsphenamine intravenously, 0.3 and 0.4 dg., once or twice a week. None of the patients took more than a fifth dose, and all have apparently been relieved for more than six months.

DR. WILLIAM ALLEN PUSEY, Chicago: In the days of Wright, about twenty years ago, for several years we followed in my office the procedure of testing the coagulability of the blood in urticaria and various toxic erythemas and analogous conditions. It was a long drawn out experience. We used a careful technic so that we could be sure of our comparative results, and after long experience we came to the conclusion that we could not find any definite relation between the coagulability and these conditions. I had about the same experience with calcium. Under the insistence of an assistant of mine who is now dead, and who was very wise, I gave calcium persistently for a long time. Up to the present, I think my associate gives some calcium and some parathyroid extract,

but I never came to a conviction of distinct therapeutic value of calcium either in urticaria or in analogous conditions. I do recall some experiences that were amusing. I remember a physician's wife, whom I had treated for a long time without results. She went to Dr. Herrick and he could find nothing wrong but said, "I will give you calcium, which is said to be good for urticaria." Whether this was due to Dr. Herrick or to the woman's imagination, or to the calcium, I do not know, but the woman was cured. My own experience has been entirely negative.

DR. GREENBAUM: Regarding the toxicity, I think it would be well to try it out in a suspected case when the results develop.

LUPUS ERYTHEMATOSUS, LUPUS VULGARIS, TUBERCULIDS AND TUBERCULOSIS OF THE SKIN

TREATMENT WITH GOLD COMPOUNDS *

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Gold, the favorite metal of mankind, formed a part of many formulas of the early alchemists. Years of experimentation were spent in investigating various elements designated by cabalistic signs, in the hope of producing this precious metal synthetically. It also formed an important ingredient in the various "elixirs of life." Paracelsus [1] stated that the mingling of the rose-colored blood from the lion and the glue from the eagle forms the philosopher's tincture for which men without number have sought.

Dalton [2] interpreted this mystic preparation as follows:

> We should remember that "lion" is one of the cabalistic synonyms for gold, and the "eagle" one of those for tin. If gold be dissolved in nitro-muriatic acid, evaporated and heated and the product dissolved in water, it forms a solution of the terchloride of gold. This was probably the alchemist's "rose colored blood from the lion." On the other hand, protochloride of tin—which is gray, resinous looking, and easily fusible—was perhaps what he called "glue from the eagle." It will precipitate the gold from a solution of its terchloride in the form of a brown powder."

Cumston [3] recorded that Paracelsus collected all the discoveries scattered through the works of Geber, Lulle, Rhases and Valentine, and by applying them to the treatment of disease was literally the founder of chemotherapy. Among his favorite metals, one finds gold used for the treatment of persons who had paralysis, fevers and uterine pains; silver for those with pain of cerebral, hepatic or splenic origin; tin for those with worms; copper for those with ulcerations of the mouth, and mercury and lead for those with syphilis.

In comparatively modern times, Cheeseman [4] (1812), following the precepts of Chrestien, used the muriate of gold in the treatment of patients with syphilis. He stated that:

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* Read before the Section on Dermatology and Syphilology at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 19, 1927.

1. Paracelsus: De Tinctura Physicorum.
2. Dalton: New York M. J., 1873, vol. 17.
3. Cumston: St. Paul M. J., July, 1903, 1903, vol. 5.
4. Cheeseman: An Inaugural Dissertation on the Medical Properties of Gold, Collins & Co., 1812.

Some trials of the muriate of gold have been made in cases of scrofula, the result not being altogether satisfactory. I forbear venturing an opinion as to its efficacy in that complaint.

Chrestien [5] used various preparations of gold almost exclusively in the treatment of patients who had syphilis, but he stated that it proved efficacious in cases of scrofula. It was not, however, until 1890 that a great impetus was given to the use of gold therapy. This was largely due to the statement of Robert Koch at the Tenth International Medical Congress in Berlin that potassium gold cyanide, even in such small dilutions as 1 : 1,000,000, prevented the growth of the tubercle bacillus in cultures. On Koch's invitation, von Behring made further investigations, and his results were confirmatory.

Brück and Glück [6] used potassium gold cyanide in cases of lupus vulgaris, but they also used tuberculin. They believed that they had observed an increase in the favorable influence of the gold on the lesions with the use of tuberculin. Bettman [7] also believed that the favorable influence was due to the combined use of tuberculin and potassium gold cyanide. Bué [8] used gold chloride with good results in the treatment of persons with tuberculous adenitis. Feldt,[9] in a series of monographs, reported the use of another gold compound, 4 amino-2 auro-thiophenolcarbonic acid. This was extensively used in both cutaneous and internal tuberculosis, not only by Feldt, but also by many other German investigators. Ruete [10] reported complete healing in a case of acute lupus erythematosus after seven injections of the compound.

Martenstein [11] used amino auro-thiophenolcarbonic acid in the treatment of forty-two patients, with cure in twenty-eight and improvement in six. Favorable results with amino auro-thiophenolcarbonic acid were also reported by Fried [12] and Ullmann.[13] A more stable and less toxic gold compound has recently been used with good results.

Møllgard [14] stated that experiments with the different kinds of gold therapy were made on animals only by Kolle and Schlossberger [15] "who were only able to show retardation of death of small tuberculous animals

5. Chrestien: Lettre a M. Magendie sur les preparations d'or, Paris, 1828.
6. Bruck and Gluck: München med. Wchnschr., 1913, no. 2.
7. Bettman: München med. Wchnschr., 1913, no. 15.
8. Bué: Thesis, Paris, 1902, no. 279.
9. Feldt: Berl. klin. Wchnschr., 1917, p. 1111; 1918, p. 229; München med. Wchnschr., 1920, p. 1500; Internat. Zentralbl. f. Tuberk., 1919, p. 273.
10. Reute: Deutsche med. Wchnschr., 1913, p. 1727.
11. Martenstein: Klin. Wchnschr. **1**:2235, 1922.
12. Fried: Tr. Wien. Dermat. Gesellsch., 1922.
13. Ullmann: Tr. Wien. Dermat. Gesellsch., 1923.
14. Møllgard: The Chemotherapy of Tuberculosis, Copenhagen, Busck, 1924.
15. Kolle and Schlossberger: Zentralbl. f. d. ges. Tuberk. **19**:341, 1923.

which were treated with Krysolgan (amino auro-thiophenolcarbonic acid) injections, and this retardation was not more pronounced than with the copper compounds, or different derivatives of iodine."

It then remained for Schamberg, Harkins and Brown [16] to publish their results with gold compounds in the treatment of animals with experimental tuberculosis of the skin. These authors stated that they had observed a demonstrable effect on the cutaneous lesions after injections of gold compounds, and in some of the animals a prolongation of life considerably beyond that of the controls. The same authors noted that a favorable influence was induced by gold therapy, but that definite cures were not obtained. In their experiments they used such various gold compounds as sodium-gold-arsphenamine, gold-naphthol-blue, gold-hexamethylenamin-thiosinamine, gold-hexamethylenamin-thiocarbamide, gold and sodium thiosulphate and a gold protein compound.

In a later communication, Schamberg and Wright [17] stated that they used gold and sodium thiosulphate in twenty-four patients suffering from lupus erythematosus, with the following results: The lesions disappeared in five cases; in six cases they were practically healed; improvements occurred in twelve cases, and a number of patients were still under treatment. Only one patient did not show improvement. The authors stated:

> For a disease which in the past has been so obstinate and intractable as to be regarded as the "bete noir" of dermatologists, these results, to say the least, are noteworthy.

At the suggestion of Dr. Schamberg, one of us (P. E. B.) used the method in an extensive case of disseminate lupus erythematosus, with such startlingly good results that it was decided to pursue the investigation further, not only in lupus erythematosus, but in all dermatoses which could be grouped under a tuberculous classification which we could find in our service at the time. Gold and sodium thiosulphate, having the formula $Na_3Au\ (S_2O_3)\ 2H_2O$, stable in the dry state, readily soluble in water and containing 37 per cent of gold, was used exclusively, except in two cases in which gold protein was employed. The compound was injected intravenously once or twice a week in 100 mg. doses, diluted in from 2 to 5 cc. of distilled water. Local or internal treatment was not administered during the course of the investigation.

The clinical material consisted of 30 cases of lupus erythematosus discoides, 1 case of lupus erythematosus disseminatus, 1 case of lupus vulgaris, 1 case of lupus pernio, 1 of lupus miliaris disseminatus faciei,

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16. Schamberg, J. F.; Harkins, M. J., and Brown, H.: Gold Compounds in Treatment of Experimental Tuberculosis of Skin in Animals, Arch. Dermat. & Syph. **13**:43 (Jan.) 1926.

17. Schamberg, J. F., and Wright, C. S.: The Use of Gold and Sodium Thiosulphate in the Treatment of Lupus Erythematosus, Arch. Dermat. & Syph. **15**:119 (Feb.) 1927.

2 of papulonecrotic tuberculids and 3 of erythema induratum. Of the thirty cases of lupus erythematosus discoides, there was complete disappearance of the eruption in four cases; four patients were practically well; eleven were greatly improved; ten were slightly improved, and only one did not show improvement. The patient who did not show improvement had considerable local reaction, with a generalized vesicular eruption after the seventh injection, and did not return for further observation. The case of lupus erythematosus disseminatus was particularly impressive; the face, neck, upper part of the chest and back, and both arms were covered with large plaques of lupus erythematosus. There was a rapid loss of weight. Roentgen-ray examination of the lungs showed a bilateral peribronchial thickening. Results of a physical examination were negative, despite a chronic cough. The patient seemed seriously ill. Gold protein compound in doses of from 5 to 10 cc. was used entirely in this case, with almost miraculous results; within a few months, the eruption had disappeared, with the exception of a few discoid lesions on the face and the patient had regained his weight and seemed to be in good health.

In the case of lupus pernio, the condition had been present for three years on the right auricle of a boy, aged 16. There was no change in its appearance after five injections of gold and sodium thiosulphate.

Lupus vulgaris occurred in a boy, aged 14, and had been present for seven years. It was on the left cheek and was about 1½ inches (3.7 cm.) in diameter. Improvement had not occurred after eight injections.

In the case of disseminate miliary lupus vulgaris, the eruption was extremely extensive and was scattered over the entire face. There was rapid improvement after three or four injections, and apparently complete cure after fourteen injections. The case, however, is open to controversy, for the condition might be classed by some as an acne agminata and perhaps placed in the tuberculid group. In our opinion, it closely followed the description of a small, disseminate, nodular lupus vulgaris.

One of the patients with erythema induratum also had a papulonecrotic tuberculid of the hands. She received twenty injections of the gold compound in four months and the eruption was practically cured. Another patient with erythema induratum had received sixteen injections of tuberculin without benefit; yet after twelve injections of gold and sodium thiosulphate she was nearly well. The third patient with erythema induratum showed marked improvement after four injections.

REACTIONS

There were remarkably few reactions following the administration of the gold and sodium thiosulphate. The gold protein, in the two cases in which it was used, was followed invariably by a marked toxic reaction (chill, nausea and prostration) within from thirty to sixty

minutes after its injection. However, recovery was rapid; the patient felt well after only a few hours. We attributed this reaction to the protein content rather than to the gold, and in this opinion Dr. Schamberg concurred.

Generalized cutaneous reactions were rare; of the thirty-seven patients who were treated, only two developed a mild generalized vesicular dermatitis which could not be classed as an extension of the lupus erythematosus, but which could well be called a dermatitis medicamentosa. Local reactions in the lesions were much more frequent; these were characterized by an accentuation of the inflammation, with vesiculation and considerable local irritation and with burning in a few cases. The more distinct the local reaction became, the more marked was the improvement following it.

COMMENT

In gold and sodium thiosulphate, we found a remedy which, when used over a period of four months in thirty cases of lupus erythematosus, gave the following results: in four cases the lesions disappeared; in four, only a slight, if any, eruption remained; in eleven cases, great improvement occurred; in ten, slight improvement (the patients are still under treatment), and in one case there was no improvement, the patient disappearing from observation after only seven injections. The results in a few cases of erythema induratum were almost equally good; all of the lesions retrogressed, leaving only the usual flat, violaceous-red stains. There was also marked improvement in the cases of papulonecrotic tuberculid. In the case of lupus vulgaris, improvement did not occur, but the patient with acne agminata was practically cured. These results are most favorable, and it seems to us that the gold and sodium thiosulphate, as introduced by Schamberg and Wright in this country, is an efficacious and apparently safe remedy for an unusually intractable dermatosis.

The questions of dosage, frequency of injection and length of treatment can be determined only by a more extended experience. We employed rather large doses, 100 mg., mostly twice a week, and some of the patients are still under treatment.

ABSTRACT OF DISCUSSION

Dr. J. Frank Schamberg, Philadelphia: I am gratified to learn that the opinions expressed by Dr. Whitehouse and Dr. Bechet are in large part confirmative of those published by Dr. Wright and myself some months ago. It is remarkable to observe the rapid influence of gold compounds in many cases of lupus erythematous. I know of two cases in which the lesions of lupus erythematous of several years' standing entirely disappeared after two injections in one case and three in the other. More treatment has been required in other cases. The question of interest revolves around the problem of tolerance. There is great difference in the tolerance of persons to this compound. Many patients develop a marked gastro-intestinal reaction, with fever, chills and marked

prostration, while others have a cutaneous reaction which may resemble a polymorphous erythema, a lichen planus, or a scaly arsphenamine dermatitis. Lesions of the mouth are not uncommon. There may also be hemorrhage from the uterus, which should make us cautious concerning the use of gold compounds in a pregnant woman. There may also be hemorrhages from the stomach or bowel. It is important that physicians who use this remedy should start with small doses, smaller than those first advised. I think the first dose should not be more than 25 mg., and if this is well tolerated the dose can be increased to 50, 60, 75 and 100 mg. In some cases a dose of 50 mg. will prove sufficient, but in some, large doses must be given. An astonishing percentage of patients with lupus erythematous are favorably influenced by this treatment. If patients prove resistant, I would suggest that the treatment be combined with the use of organic iodine, which has been observed to give satisfactory results in some cases.

In lupus vulgaris we are dealing with a distinctly tuberculous infection, and the treatment is by no means so satisfactory. There is marked improvement in many cases, sometimes a 50 or 70 per cent cure, and then the effect ceases. In these I would advise the combination of tuberculin or organic iodine. We have seen a rapid healing and disappearance of an extensive tuberculous ulceration of the feet which had resisted all remedies until gold thiosulphate was administered intravenously. This patient had a slight relapse later, following discontinuance of the treatment, but was completely relieved on resumption of treatment. How the gold compound acts, we do not know. It is known through the excellent research of Wells, DeWitt, and a third associate referred to in their book on tuberculosis, that a gold compound produces a hyperemia around the tubercle and causes a reaction which may be favorable or unfavorable, depending on the dosage. I regard a gold compound as almost a specific in the treatment of lupus erythematosus. It appears at present that gold and sodium thiosulphate is the most eligible compound, but with further research a superior preparation will probably be available. A gold preparation is a remedy which is a double-edged sword. It may cause harm as well as good, even to the point of a fatal termination, as has occurred both here and abroad. In the treatment for the disseminated type of lupus erythematous, it is particularly important that the dosage in the beginning is small. My personal feeling is that in these cases it is better to use a gold protein compound, which has a much lower toxicity than the gold or silver thiosulphate, and which may be sufficient to bring about a favorable result.

Dr. Howard Fox, New York: I would like to report a few cases at the University and Bellevue Hospitals in which the patients have been treated by this method. Thirteen patients were treated, but it was possible to analyze only eight cases, because of irregularity of attendance. For the first dose, 50 mg. were given, and 100 mg. were used subsequently. No other treatments were given except locally. The average number of treatments was eleven over an average period of eighty-one days. The results in two cases were excellent; the eruption disappeared entirely. In four cases the eruption was greatly improved and two cases were classed simply as improved. In one case lesions of the scalp cleared up and in another they failed to change, while those on the face disappeared. Reactions occurred as follows: nausea in two cases, generalized itching in two, slight fever in one and rather high fever in another. I may also mention two patients in private practice in whom the results were strikingly good. In one the eruption disappeared completely and in another, an obstinate case, in which the patient has been under observation for a number of years,

there has been marked improvement. In this case, that of a woman, I had used most of the recognized methods of treatment, including carbon dioxide snow, quartz lamps, radium and finally, curettage, but a few injections of gold and sodium thiosulphate caused tremendous improvement, much greater than I had been able to obtain by any other means.

Dr. Jeffrey C. Michael, Houston, Texas: Without doubt, gold compounds are the most valuable agents we possess for the treatment of patients with lupus erythematosus. But there are some cases in which these substances must be discontinued because of serious reactions; in such instances I would suggest the use of neoarsphenamine. This drug is given in the same way, but in smaller doses, as in syphilis. Recently, Ravaut and Golay reported favorable effects from neoarsphenamine, an experience which I can corroborate; hence my suggestion for its use as a substitute remedy in patients intolerant to gold compounds.

Dr. Joseph J. Eller, New York: I wish to report the effect on some patients who were treated at the Cornell University Clinic. All of the patients responded to treatment, but many of them reacted constitutionally from the 100 mg. dose. In those cases we lowered the dose to 25 mg., then gradually raised it to 100 mg. again, and then to 150 mg., without unfavorable results. A patient treated by Dr. Wise had a lesion of lupus erythematosus, about 4 inches (10.16 cm.) in diameter, on the right temple, which had been present for eighteen years; the response was remarkable. A patient treated by Dr. Bechet, had a marked erythema induratum and the patient responded favorably to the treatment with gold compound. This was particularly interesting because some of the European observers reported that the response in tuberculosis of the skin was not very good.

Dr. Paul A. O'Leary, Rochester, Minn.: We have treated eighteen patients who had lupus erythematosus with 4 amino-2auro-theophenol carbonic acid, with encouraging results. The seven patients who were markedly improved had lupus erythematosus of the superficial type and were patients in whom we were unable to demonstrate clinical evidence of tuberculosis. One patient developed a mild systemic reaction following the third injection of amino-aurothiophenol carbonic acid and threatened dissemination of the lupus erythematosus. However, following the use of sodium thiosulphate and a month's rest from treatment, she completed the course of gold and sodium thiosulphate with satisfactory clinical results. The results thus far are encouraging.

Dr. Adolph Rostenberg, New York: I think every one who has tried this remedy should relate his experience. I can report good results in three patients. The condition cleared up entirely in three cases and in two there was marked improvement. One case was of great interest. I had just started to treat this young girl, who was suffering from a severe type of lupus erythematosus affecting her hands. She had also discoid lesions on the face and scalp, with complete loss of hair. I used carbon dioxide snow in the beginning, but when this remedy came into vogue I gave her some injections, and the condition cleared up after three or four. The cosmetic results were far better than from the carbon dioxide snow. The lesions on her hands cleared up promptly, and recently I saw her and found that her hair had begun to grow in again on the scalp. I feel that this remedy is one of the greatest advances in the treatment of lupus erythematosus.

Dr. J. Edgar Fisher, Cleveland: My experience with this drug consists of sixty injections of gold sodium thiosulphate in a series of five cases, four patients with lupus erythematosus and one with lupus vulgaris. In one patient, the result was excellent. That man had had lupus erythematosus for a number of years.

The disorder cleared up after two treatments. Two other patients improved; one showed no improvement. In a case of lupus vulgaris, twelve injections were given; improvement was noted up to the eighth injection. I should like to ask Dr. Bechet whether in his opinion the drug acts as a foreign protein, or whether it acts on the etiologic factors of lupus erythematosus.

DR. HARRY C. SAUNDERS, New York: A patient who had a condition of several years' duration with a typical butterfly lesion which was indurated and covered with a heavy scale, had a severe reaction after the second injection. The reaction consisted of chills and fever and lasted nearly ten days, but the lesion became inactive. Another patient had a slightly erythematous and finely scaling lesion of three months' duration on each of the upper eyelids. This patient did not have any reaction, but he did not improve until after the fourteenth or fifteenth injection, and entire involution occurred, after about twenty injections.

DR. PAUL E. BECHET: The work was undertaken at Dr. Schamberg's suggestion, and with his help. At the time he advised us to use doses of 100 mg. once a week, then twice a week if improvement seemed too slow. We have been using this dosage, giving an average of from thirty to forty injections a week for the past six months, without encountering any definite reactions, other than one or two mild, generalized vesicular eruptions, which healed promptly with the cessation of the gold therapy. We did not note any marked constitutional reaction. With this experience in mind, we regarded the dose of 100 mg. as entirely safe; however, we shall keep in mind the doses now advised by Dr. Schamberg. Dr. Fox said that he had not observed improvement in one case of lupus erythematosus of the scalp. My experience does not coincide with Dr. Fox's; results were most favorable. A private patient is practically well, with some marked growth of hair on the scarred areas. Dr. O'Leary has obtained the best results in superficial cases. This is true, yet one of the best results we obtained was in a man who had a large infiltrated mass of lupus erythematosus covering most of the face; the disease had been present for thirty years, and was complicated by a severe radiodermatitis. In answer to Dr. Fisher, I am sorry that I cannot enlighten him. The drug must be used empirically, unless it is determined at some future time that lupus erythematosis is a tuberculid, and that in accordance with the experiments of Koch and others the gold compound has a specific action on the tubercle bacillus or its toxins.

FUNGI AND FUNGOUS DISEASES

LECTURE I *

ALDO CASTELLANI, C.M.G., M.D.

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NEW ORLEANS

(Continued from page 425)

CLASS II. ASCOMYCETES

These fungi are characterized by their mode of reproduction, viz., by spores originating inside special cells called asci. The spores (ascospores, endospores, gonidia) inside the asci generally number four or eight or a multiple of eight. While these fungi live a parasitic life, asci are not found, and reproduction takes place by germination and conidia. The fungi belonging to this order are often pleomorphic, their morphologic characters changing according to the medium on which they live.

Classification.—Ascomycetes are divided into the following subclasses:

A. Asci with varying number of spores, usually numerous—*Hemiascomycetes.*

B. Asci with a definite number of spores.

I. Asci separate or scattered—*Protoascomycetes.*

II. Asci approximate, usually forming a hymenium—*Euascomycetes.*

Subclass Protoascomycetes

The subclass *Protoascomycetes* contains a single order, the *Saccharomycetales.*

ORDER SACCHAROMYCETALES

This order is divided into two families as follows:

A. Vegetative cells single or loosely attached in irregular colonies—*Saccharomycetaceae.*

B. Vegetative cells, forming a mycelium—*Endomycetaceae.*

Family *Saccharomycetaceae* Rees, 1870.

Definition.—Protoascomycetes with vegetative cells, single or loosely attached in irregular colonies; mycelium not usually developed; asci isolated, not differentiated from vegetative cells.

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* The Adolph Gehrmann Lectures of the University of Illinois College of Medicine, 1926.

Remarks.—These organisms are generally round or ovoid cells, presenting a cell wall of single or double contour; the internal protoplasmatic mass often shows granules and vacuoles. During active vegetation as parasites they reproduce by a budding process, hence the name of budding fungi; when living on artificial mediums, under unfavorable nutritive conditions, or in the absence of oxygen, they multiply also by formation of endospores or ascospores. Each cellular element may become an ascus containing from one to four, sometimes more, up to twelve spores (ascospores).

The organisms are, as a rule, unicellular plants, but at times the cells elongate, and a rudimentary mycelium may be formed. This occurs, for instance, when the organisms are cultivated in certain fluid culture mediums, for example, fluid beer-wort. In such cases sidebuds, which separate into conidia-like bodies, may also develop on the hyphae.

Classification.—The family contains thirteen genera, of which only three—*Saccharomyces* Meyen, 1837, *Debaryomyces* Klocher and *Willia* Hansen, 1904—contain species parasitic on man.

A¹. Vegetative cells globose, ovoid or pyriform, without lemon-shaped extremities.

B¹. Vegetative cells multiply by budding.

C¹. Vegetative cells without large fat globule; asci 3 to 4 spored.

D¹. Ascospores globose or ovoid.

E¹. On germination spores form typical yeast cells.

F¹. Ascus formation not preceded by zygosis.

G¹. Spore membrane single.

H¹. Spore membrane verrucose—*Debaryomyces* Klocher.

H². Spore membrane verrucose and possessing a superficial elevated linear process, dividing the surface into two unequal portions—*Schionniomyces* Klocher.

H³. Spore membrane without verrucosities or crest—Saccharomyces *Meyen*, 1838.

G². Spore membrane double; an inner, endosporium, and an outer, exosporium —*Saccharomycopsis* Schionning.

F². Ascus formation preceded by zygosis; ascospores have a smooth membrane —*Zygosaccharomyces* Barker, 1901.

E². On germination, spores form a poorly developed promycelium, multiplication by a process intermediate between budding and transverse division—*Saccharomycodes* Hansen, 1904.

D². Ascospores pileiform or limoniform; costate with bowler hat shape; no alcoholic formation, but ethers produced, with pleasant fruity odor, in sugar mediums—*Willia* Hansen, 1904.

D³. Ascospores spherical, hemispherical or irregularly shaped; thick pellicle with air-bubbles on sugar liquid mediums—*Pichia* Hansen, 1904.

C². Vegetative cells large, spherical, each containing a large fat globule as in torula; D. asci 8 spored—*Torulaspora* Linder.

B². Vegetative cells multiply by fission: asci 8 spored—*Schizosaccharomyces* Beyerinck, 1893.

A². Vegetative cells oval, with one or both extremities lemon-shaped; asci 1 spored—*Hansenia* Linder.

A¹. Vegetative cells elongate, cylindric, spores filiform; asci 1 spored—*Monospora* Metchnikoff; asci 8 spored; ascospores flagellate—*Nematospora* Peglion.

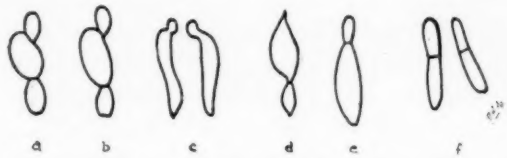

Fig. 23.—Types of yeast (vegetative cells): (*a*) Saccharomyces cerevisiae; (*b*) Saccharomyces ellipsoideus; (*c*) Saccharomyces pastorianus; (*d*) Saccharomyces apiculatus; (*e*) Saccharomycoides; (*f*) Schizosaccharomyces (after Lindner).

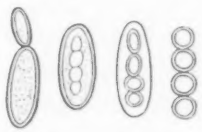

Fig. 24.—Saccharomyces anginae with ascospores (after Troisier and Achalme).

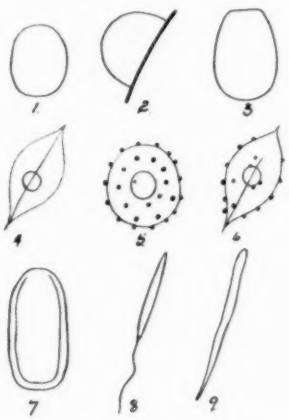

Fig. 25.—Various types of ascospores: (1) Saccharomyces; (2) to (4) Willia; (5) Debaryomyces; (6) Schiönnoimyces; (7) Saccharomycopsis; (8) Monospora; (9) Nematospora.

Genus *Saccharomyces* Meyen, 1838.

Definition.—Saccharomycetaceae with smooth spores, spore membrane single; no evidence of any copulative process; occasionally rudimentary mycelial tubes present, with transverse septation; induce alcoholic fermentation.

Remarks.—As already stated, the fungi of this genus, as well as of the genera *Cryptococcus, Monilia, Oidium* and *Coccidioides,* are usually called *Blastomycetes,* and the diseases induced by them blastomycoses.

The fungi of the genera *Saccharomyces, Cryptococcus* and *Coccidioides* have a great importance in dermatology, as they give rise to peculiar ulcerative conditions of the skin, often resembling a syphilide or a tuberculide. The first cases of blastomycosis were observed in America by Posadas, Wernike and others, who at first believed them to be a protozoal infection. Later, Gilchrist, Ricketts and others recognized the true nature of the parasites. Some authors (Sanfelice, Roncali, etc.) have considered cancer to be of blastomycetic origin.[9]

Saccharomyces blanchardi Guiart, 1906. Found at an operation by Blanchard, Schwartz and J. Binot, on a patient who had been considered to be suffering from tubercular peritonitis. The fungus had produced in the peritoneum a large, whitish, gelatiniform mass, weighing about 1 Kg. The fungus grew well on all sugar mediums.

On maltose agar it produced crateriform colonies of a snow-white color; asci with eight spores were present. On gelatin the growth was mucoid-like and gray. Liquefaction of the medium was slow. On potato there was a mucoid growth, whitish and darkening after a long time. On carrot the growth was viscid and abundant; it was pathogenic to rabbits, in which it induced a general mycosis, which terminated fatally.

Saccharomyces granulatus Vuillemin and Legrain, 1900. Observed by Vuillemin and Legrain in a tumor of the submaxillary bone; cells ovoid, from 4 to 5 microns in length, and from 3 to 4 microns in breadth; cultures pinkish or pinkish red; ascospores and chlamydospores present; gelatin not liquefied; sugar reactions not given.

Saccharomyces tumefaciens Curtis, 1896. *Synonym.—Saccharomyces subcutaneus tumefaciens* Curtis, 1896. Found by Curtis in a myxomatous tumor. It appeared in the tissues in the shape of spherical bodies from 16 to 20 microns in diameter, each surrounded by a zone of amorphous substance; grows well on all sugar mediums; in old cultures asci are seen, with from one to four spores; gelatin with surface growth whitish, no liquefaction; said to ferment saccharose, but not maltose or lactose; action on dextrose not mentioned; pathogenic to rats and dogs.

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9. Fungi of the genus *Saccharomyces* are important from an industrial and agricultural standpoint, being the cause of alcoholic fermentation. The best known yeast is the brewer's yeast, *S. cerevisiae,* which is slightly ovoid, from 8 to 9 microns in diameter.

Saccharomyces samboni Castellani, 1907. Cells roundish, from 6 to 8 microns in diameter, easily grown on various mediums, producing white colonies, which rapidly coalesce; found by me in Ceylon in a few cases of intertriginous dermatitis of the cruroscrotal region. A similar or identical organism has been observed by Whitfield in England in a case of the same dermatitis. Ferments glucose, levulose and maltose; gelatin is not liquefied; in old cultures asci are occasionally present, but certain strains do not seem capable of producing asci and therefore probably belong to the genus *Cryptococcus*.

Saccharomyces hominis Klein and Gordon, 1903. Isolated in some cases of tonsillitis clinically resembling diphtheria; roundish or oval cells, from 5 to 7 microns in diameter; pathogenic to guinea-pigs and rabbits; sugar reactions unknown.

Saccharomyces anginae Achalme and Troisier, 1895. Found by Achalme and Troisier in a case of tonsillitis showing white patches; in situ cells ovoid, from 8 to 15 by 5 to 6 microns; in cultures 4 spored asci are present; on gelatin, surface growth white; ferments saccharose, but other reactions are not given.

Saccharomyces balzeri Balzer, Burnier and Gougerot, 1911. *Synonym.—Parendomyces balzeri* Balzer, Burnier and Gougerot, 1911. Grows on culture mediums under the type of oval or roundish, yeastlike cells, proliferating by budding; isolated by Balzer, Burnier and Gougerot from a gummatous condition; sugar reactions unknown.

Saccharomyces roseus Maggiora and Gradenigo, 1890. Found by Maggiora and Gradenigo in the eustachian tube, and considered by them to be nonpathogenic; cultures pink; sugar reactions unknown.

Saccharomyces cerevisiae Meyen, emendavit Hansen. *Synonym.—Cryptococcus fermentum* Kützing; *Torula cerevisiae* Turpin; *Hormiscum cerevisiae* Bail.

Cells oval or roundish, ascopores formed at all temperatures between 12 and 37 C., optimum from 25 to 30 C.; abundant growth on all ordinary laboratory mediums, colonies white, surface usually smooth. There are several varieties of *S. cerevisiae*. The one in my collection gas ferments dextrose, levulose, maltose, galactose and saccharose. This fungus and its varieties are used in the production of beer.

Saccharomyces ellipsoideus Hansen. Vegetative cells, mostly elliptical; optimum temperature for appearance of ascospores 25 C., but ascospore formation takes place at any temperature between 10 and 32 C. The ascus cell is of small dimensions, is ellipsoidal and contains from one to four ascospores which measure from 2 to 5 microns; according to Marchand, they germinate after having copulated two by two. This *Saccharomyces* which is found on the surface of grapes plays an important rôle in the process of vinification.

Saccharomyces pastorianus Hansen. Vegetative cells roundish or oval, at times elongated; asci elongated, usually containing from 1 to 4 ascospores; each ascospore varies in size between 1.5 and 3.5 microns; occasionally much larger ascospores may be seen, up to 5 microns in diameter; optimum temperature for development of ascospores 27.5 C., but ascospore formation takes place at any temperature between 4 and 30.5 C.; at 31.5 C. formation of ascospores ceases completely. This fungus gives a bitter taste and a bad odor to beer.

Genus *Debaryomyces* Klocher

Definition.—Saccharomycetaceae with ascospores presenting a verrucose surface. Several yeastlike organisms, some of which are found in scrapings from the skin and are probably nonpathogenic, have been classified in this genus by Ota. A pathogenic one is *Debaryomyces hudeloi* (de Beurmann and Gougerot, 1909), Fonseca emendavit 1922. Asci, which are scanty, contain one spore with a verrucose surface. The fungus is said to ferment glucose and saccharose, but not levulose, maltose, galactose or lactose. It was found by Hudelo, Rubens, Duval and Laederich in a case of multiple abscess in France (Busse-Buschke type of blastomycosis). The vegetative cells are roundish or oval, occasionally elongated. They are from 2 to 4 microns in diameter, and when elongated from 6 to 8 microns.

Genus *Willia* Hansen, 1904.

Definition.—Saccharomycetaceae with ascospores lemon-shaped or hat-shaped;[10] as a rule they do not produce alcoholic fermentation, but do produce various ethers; cultures present a pleasant fruity odor.

Species in Man.—Willia anomala Hansen, 1904

Willia anomala Hansen, 1904. Rather small oval cells; in sugar liquid mediums it forms a well marked membrane, containing air-bubbles; asci with from two to four spores of the so-called hatlike type: dextrose fermented, but not saccharose or maltose; ferments beer-wort, with production of ethers; found by Beauverie and Lesieur in the sputum of a tuberculous patient.

Family Endomycetaceae.

Definition.—Mycelium usually well developed, multiseptate; asci 4 to 8 spored; spores 1 celled.

A. Mycelium poorly developed—*Podocapsa.*

B. Mycelium well developed.

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10. Castellani and Chalmers (footnote 3, fig. 492).

I. Asci formed after zygosis—*Eremascus.*
II. Asci formed asexually.
(*a*) Asci 4 spored—*Endomyces.*
(*b*) Asci 8 spored—*Oleina.*
(*c*) Asci with a large number of spores—*Coccidioides.*

Only *Endomyces* and *Coccidioides* contain species parasitic of man.

Genus *Endomyces* Rees, 1870.

Definition.—*Endomycetaceae* with mycelium abundant, ramified or not, simple or septate; presence of budding and asci with four spores; reproduction by external spores, ascospores and spores situated inside the mycelial tubes.

Remarks.—Vuillemin believed at one time that the thrush fungus belonged to this genus. Researches carried out by me have demonstrated that the condition known as thrush may be caused by various fungi. These fungi, as a rule, do not reproduce by ascospores, and, as justly remarked by Pinoy and Vuillemin himself, belong to the

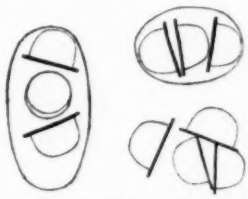

Fig. 26.—Willia ascospores.

genus *Monilia.*[11] For the fungus isolated once by Vuillemin, which has all the characteristics of the genus *Endomyces,* Landrieu has suggested the term *Endomyces vuillemini.*

Endomyces vuillemini Landrieu, 1912. *Synonym.*—*Endomyces albicans* Vuillemin, 1898.

This fungus was found by Vuillemin in 1898 in thrush patches.

Parasitic Life.—It forms white patches on the tongue and buccal mucosa. The patches are easily detached. A particle examined under the microscope shows septate mycelial threads, simple or ramified, the articles of which are straight or somewhat bent. Each article or cell is about 20 microns in length, and from 3 to 5 microns in breadth. At the terminal portion of each mycelial thread three or four shorter ovoid elements are found which reproduce by budding. Some similar ovoid or roundish globular refringent cells can be observed, originating laterally at the septations of the mycelium. These globular elements, which were at first considered to be spores, become detached, and reproduce by germination.

11. Castellani and Chalmers (footnote 3, p. 1079).

Saprophytic Life.—Culture Characters: The fungus grows well on slightly acid, Sabouraud's and other mediums, does not grow abundantly in alkaline mediums, does not ferment lactose and is gram-positive.

In cultures the fungus appears under two forms: (1) a filamentous form, showing the mycelial threads simple or ramified; (2) a globular form, morphologically similar to a typical yeast, and reproducing by budding. Both forms may be found in the same culture.

The fungus in cultures reproduces by: 1. Chlamydospores or external spores; large globular cells from 10 to 20 microns in diameter, with thick resistant walls. The chlamydospores are situated at the terminal extremity of some mycelial hyphae, and represent modified mycelial articles.

2. Asci containing four ascospores.

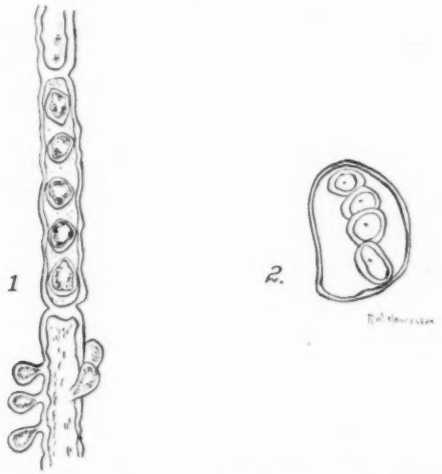

Fig. 27.—Endomyces vuillemini: (1) Mycelial thread showing arthrospores and conidia; (2) ascus with four ascospores.

3. Arthrospores. These are oval cells with membrane, protoplasm and nucleus similar to the external spores. The internal spores are arranged in a single string inside some mycelial tubes.

Pathogenicity.—The fungus was found by Vuillemin in a case of thrush, a condition generally due to fungi of the genus *Monilia.*[12]

Genus *Coccidioides* Rixford and Gilchrist, 1896.

Definition.—Endomycetaceae with mycelium well developed and asci containing a large number of spores, with intermediate characters between *Saccharomyces* and *Monilia.* One species only: *Coccidioides immitis* Rixford and Gilchrist, 1896.

12. Castellani, Aldo: Fungi and Fungous Diseases: Lecture II, Arch. Dermat. & Syph. to be published.

Coccidioides immitis Rixford and Gilchrist, 1896. *Synonyms.*—*Coccidioides pyogenes* Rixford and Gilchrist, 1896; *Oidium coccidioides* Ophüls, 1905; *O. protozoides* Ophüls, 1905; *Posadasia esferiformis* Canton, 1898; *Oidium immite* Verdun, 1907.

Definition.—*Coccidioides* with a large number of spores in the asci.

This organism was discovered by Wernicke in 1882 in America in a patient with patches resembling a tuberculide, and gummas. In the lesions are seen roundish bodies of various sizes, from 3 to 80 microns in diameter, with a well defined thick membrane. Inside some of the bodies numerous spores may be seen. This genus is not well defined.

Cultures.—The fungus grows under two types: (1) a saccharomyces-like type, reproducing by budding; (2) a filamentous type.

The colonies are roundish, slightly elevated, but deepening into the medium. In old cultures chlamydospores may be present. The bio-

TABLE 8.—*Simple Classification of Yeastlike Fungi*

"Yeastlike" Fungi—Mycelium	Absent—Asci	Present, Saccharomyces sensu lato
		Absent, Cryptococcus sensu lato
	Present—Asci	Absent, Monilia sensu lato
		Present, Endomyces sensu lato

chemical properties of the fungus are not completely known; it does not cause gas fermentation in any sugar.

Pathogenicity.—The fungus induces in man a type of blastomycosis which has been thoroughly investigated in this country. It is pathogenic to monkeys, mice, guinea-pigs and rabbits. It probably lives saprophytic in nature.

SIMPLE SCHEME OF CLASSIFICATION OF "YEASTLIKE" FUNGI WHICH MIGHT BE USED BY CLINICIANS AND CLINICAL PATHOLOGISTS

The clinician and clinical pathologist do not require for their purposes in practice an elaborate classification as the pure mycologist does.

The term "yeastlike" fungi is somewhat unscientific but it is useful in practice to denote all fungi that reproduce solely or principally by budding and appear in the lesions under the shape of oval or roundish cells, some of them budding, with usually complete absence of mycelium; in cultures a little mycelium may be present, although the roundish or oval cells always greatly predominate.

The term "yeastlike" fungi, as generally understood at present by medical men, covers fungi of the following genera: *Cryptococcus, Coccidioides, Saccharomyces, Willia, Torula, Pityrosporum, Endomyces, Monilia, Mycoderma, Oidium*, as defined by certain authorities, and the doubtful genera *Parendomyces, Parasaccharomyces* and *Zymonema.*

The simple classification I have suggested is based on the presence or absence of mycelium and the presence or absence of ascospores.

Subclass Euascomycetes

Definition.—Ascomycetes with asci not separate or scattered, but approximate, usually forming a hymenium, and with a definite number of spores in an ascus.

Classification.—According to Stevens, the following orders may be recognized:

A. Asci approximate, no definite ascoma, but an inhymenium—*Protodiscales.*
B. Asci grouped in a definite ascoma.
  I. Asci not in a cylindric or globose perithecium—*Helvellales, Pezizales, Phacidiales, Hysteriales* and *Tuberales.*
  II. Asci in a cylindric or globose perithecium.
    (*a*) Perithecium sessile.
      1. Asci arising from a common level in the perithecium—*Perisporiales, Hypocriales, Dothidiales, Sphaeriales* and *Pyrenomycetes.*
      2. Asci arising at different levels in the perithecium—*Aspergillales.*
    (*b*) Perithecium on a short pedicle—*Laboulbeniales.*

Only the *Aspergillales* and the *Pyrenomycetes* interest us. The latter differ from the former by having their asci arranged in a hymenium within the closed ascocarp.

Order Aspergillales

Definition.—Euascomycetes with asci gathered into definite cylindric or globose perithecia.

Type Family.—Aspergillaceae.

Classification.—The order contains a number of families, which may be recognized as follows.

A. Peridium of loose floccose hyphae—*Gymnoascaceae* Baranetzky, 1872.
B. Peridium compact.
  I. Perithecia small.
    (*a*) Perithecia mostly sessile.
      1. Peridia closed—*Aspergillaceae.*
      2. Peridia open—*Trichocomaceae.*
    (*b*) Perithecia mostly stalked—*Oxygenaceae.*
  II. Perithecia large—*Elaphomycethaceae* and other families.

Only the *Gymnoascaceae* and the *Aspergillaceae* are of interest here.

Family *Gymnoascaceae* Baranetzky, 1872.

Definition.—Aspergillales with the peridium composed of loose hyphae, at the extremities of which the asci are situated, or without perithecial or ascal formation, and reproducing (as far as is known), as a rule, by mycelial or conidial spores.

Type Genus.—Gymnoascus Baranetzky, 1872.

Classification.—From the definition given previously, it is obvious that the family is capable of being divided into two tribes, as follows:

A. *Ascomycetes* type:

With perithecia and asci—tribe 1, *Gymnoascaceae* Castellani and Chalmers, 1918.

B. *Fungi imperfecti* type:

Without perithecia or asci; reproduction asexual by mycelial and conidial spores—tribe 2, *Trichophytoneae* Castellani and Chalmers, 1918.

Tribe *Trichophytoneae* Castellani and Chalmers, 1918.

Definition.—Gymnoascaceae of the *Fungi imperfecti* type.

Type Genus.—Trichophyton Malmsten, 1845.

Classification.—The various genera belonging to this tribe may be recognized as follows.

A. In lesions only mycelial filaments and no spores present—genus *Lophophyton* Matruchot and Dassonville, 1899.

B. In lesions mycelial filaments and spores present.

I. In cultures no conidial-bearing hyphae found; do not attack hairs or hair follicles, but grow in the superficial or deep strata of the epidermis.

(*a*) Pluriseptate spindles present in cultures; grow in the superficial strata of the epidermis, do not attack hairs; cultures not faviform—genus *Epidermophyton* Lang, 1879.

(*b*) Pluriseptate spindles unknown in cultures; grow between the superficial and deep layers of the epidermis; cultures faviform—genus *Endodermophyton* Castellani, 1909.

II. In cultures conidial-bearing hyphae present; may or may not attack hairs or hair follicles.

(*a*) Conidia only at the ends of hyphae; large—genus *Montoyella* Castellani, 1907.

(*b*) Conidia only at the sides of hyphae; not large—genus *Pinoyella* Castellani and Chalmers, 1918.

(*c*) Conidia at the ends and sides of hyphae.

1. In cultures fusiform bodies present as septate or nonseptate spindles; yellow favic scutula not present in lesions.

(A) Conidia on short stalks.

(1) Attack hairs or hair follicles.

(1^1) Grows in and on the surface of the hair; is often pyogenic and of animal origin—genus *Ectotrichophyton* Castellani and Chalmers, 1918.

(2^1) Grows mainly in the hair, but a few mycelial filaments and spores can be found outside the hair; not pyogenic; of human origin—genus *Neotrichophyton* Castellani and Chalmers, 1918.

(3^1) Grows entirely in the hair and filaments and spores cannot be found outside it; not pyogenic, except most rarely; of human origin—genus *Trichophyton* Malmsten, 1845.

(2) Do not attack hairs or hair follicles—genus *Atrichophyton* Castellani and Chalmers, 1918.

(B) Conidia sessile—genus *Microsporum* Gruby, 1843.

2. In cultures fusiform bodies present in the form of swollen claviform ends of filaments, yellow favic scutula present in lesions—genus *Achorion* Remak, 1845.

Genus *Microsporum* Gruby, 1843.

Definition.—Gymnoascaceae with only *Fungi imperfecti* forms known; producing in the lesions mycelial filaments and mycelial spores, which are small, roundish, and about 2 to 3 microns in diameter. In cultures hyphae bearing sessile conidia and septate or nonseptate fusiform bodies may be seen. The lesions in man do not produce yellow favic scutula.

Type Species.—Microsporum audouini Gruby, 1843.

Remarks.—The fungi belonging to this genus are generally parasitic in the hairs and hair follicles, but may attack glabrous parts. When parasitic in the hairs, they are characterized by the mycelial spores being roundish, small (from 2 to 3 microns) and irregularly arranged in a mosaic-like manner. They are easily cultivated on Sabouraud's and other sugar mediums (see genus *Trichophyton*). In cultures the microsporons proliferate by sprouting with branching of the mycelium; and also, often, by:

1. Spore-Bearing Hyphae: of type *Acladium*, the conidia being oval, from 3 to 4 microns in length, and from 2 to 3 microns in breadth.

They are not supported by short sterigmas, as is the case in the genus *Trichophyton.*

2. Terminal Septate or Nonseptate Spindles (*Macroconidia*): These structures are found at the end of certain filaments, and may be considered to be modified terminal conidia. They are large fusiform structures, from 30 to 60 microns in length, and from 15 to 18 microns in breadth. They have granular contents, and may be septate or nonseptate. At the apex there are some peculiar hairlike formations which are not observed in the spindle of the fungi of the genus *Trichophyton.*

3. Chlamydospores: Certain mycelial articles become expansive, ovoid or ampulliform, from 22 to 18 microns in length, and 6 to 8 microns in breadth. Their protoplasm may be granular, and the membrane may

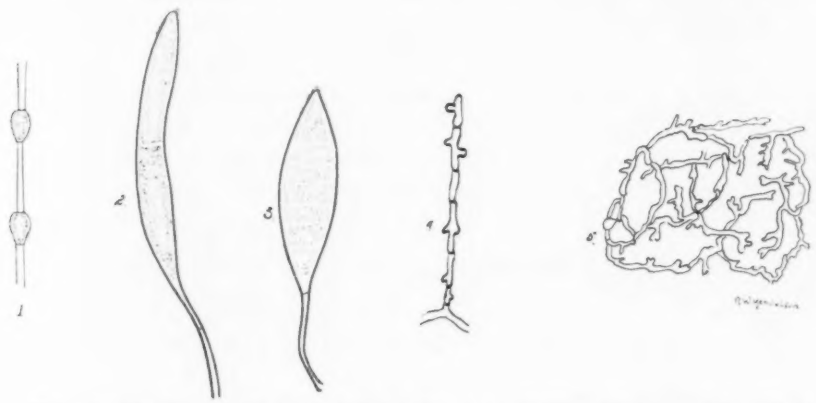

Fig. 28.—Microsporum audouini Gruby; (1) chlamydospores; (2) spindle (fusiform macroconidium); (3) pluriseptate spindle; (4) conidiophore (type Acladium); (5) denticulated structures (after Bodin).

become much thicker and have a double contour. These elements are chlamydospores. They are generally found when the fungi vegetate under unfavorable conditions. Other structures often seen in fungi of the genus *Microsporum* are the so-called denticulate or pectinate bodies, which are mycelial segments, generally curved, showing on one side—the convex side as a rule—several small protruding processes. Bodin has demonstrated that these processes are mycelial tubes arrested in their development.

Pleomorphism.—After a time, and often rapidly, the cultures of microsporons lose their characteristics and become pleomorphic. This phenomenon is not prominent, however, in the most important species, viz., *Microsporum audouini,* while it is accentuated in some microsporons of animal origin, especially *M. minimum,* in which, according

to the complete investigation carried out by Bodin, two types may be encountered:

1. The downy type (*Acladium* type) is found on the ordinary sugar mediums in which there is an abundant development of white duvet. Microscopically, fructifications of the type *Acladium* are seen, the spore-bearing hyphae presenting numerous lateral sexile conidia. Subcultures will always give rise to the same downy type.

2. The glabrous type (*Endoconidium* type) is observed on wort agar. The growth has a smooth surface, without duvet. Microscopically, short strings of hyaline, ovoid or cylindric conidia are seen inside the terminal segments of the fertile hyphae. Lateral conidia are absent.

TABLE 9.—*Species of Microsporum Parasitic on Man*

Genus		Species
Microsporum Gruby, 1843	Of human origin	M. audouini Gruby, 1843
		M. velveticum Sabouraud, 1907
		M. umbonatum Sabouraud, 1907
	Of animal origin	M. ferrugineum Ota, 1921
		M. tardum Sabouraud, 1909
		M. scorteum Priestley, 1914
		M. minimum Le Calvé et Malherbe, 1898
		M. lanosum Sabouraud, 1907
		M. felineum C. Fox and Blaxall, 1896
		M. fulvum Uriburu, 1907
		M. pubescens Sabouraud, 1909
		M. villosum Minne, 1907
		M. tomentosum Pelagatti, 1909
		M. iris Pasini, 1912
		M. flavescens Horta, 1912
		M. depauperatum Guéguen, 1912

Mode of Infection.—Infection takes place from man to man in the case of microsporons of human origin, and from the lower animals to man in the case of microsporons of animal origin. The human microsporons (*M. audouini, M. velveticum, M. umbonatum* and *M. tardum*) do not seem to be inoculable into the lower animals.

Some species (*M. audouini, M. velveticum, M. umbonatum* and *M. tardum*) seem to be parasitic on man only; others (*M. lanosum, M. felineum, M. minimum,* etc.) are parasitic on the lower animals, but occasionally infect man.

Microsporum audouini Gruby, 1843. This parasite was described by Gruby in 1843, but his investigation was forgotten, till Sabouraud, in his classic researches on ringworm in 1892, demonstrated the plurality of species of the fungi found in this condition, and showed that a form of tinea capitis was due to the microsporon described by Gruby.

Parasitic Life.—Around the affected hairs the fungus forms by means of its mycelial spores a white opaque sheath, extending 2 or 3 mm. above the opening of the hair follicle. The sheath is composed of a mosaic of small, roundish or polyhedral spores, the diameter of which varies between 2 and 3 microns. In the interior of the hair a few mycelial filaments of the fungus may be observed. The fungus seldom attacks glabrous parts of the body.

Saprophytic Life.—Cultures: *Microsporum audouini* grows well on Sabouraud's maltose agar and other mediums. The rate of growing is slow. In maltose agar the growth becomes evident about a week after inoculation under the appearance of a plaque of a so-called "satiny aspect," beneath the surface. In a few days more, aerial hyphae develop, extending above the surface. When the development is complete—generally this takes about six to eight weeks—the growth is roundish and covered with short grayish duvet, and presents often a central knob, and concentric whitish grayish rings The cultural characters, however, are variable, and pleomorphism occurs. The cultural characters have been thoroughly investigated by Sabouraud, Fox and Blaxall, Bodin and others. The fungus slowly liquefies gelatin; on potatoes it produces a brownish discoloration compared by Sabouraud to the color of dried blood.

Reproduction.—This takes place as follows:

1. By sprouts from the mycelial tubes.

2. By small terminal and lateral conidia, there being spore-bearing hyphae of type *Acladium.*

3. By large unilocular or multilocular spindles or fuseaux of French authors (macroconidia). These spindles are large structures from 30 to 60 microns in length and from 15 to 18 microns in breadth. They may be septate or nonseptate. The pole of the spindle often shows some delicate hairlike structures.

4. By formation of chlamydospores.

Pathogenicity.—*Microsporum audouini* causes the most obstinate form of tinea capitis. The patches affected are often large and scaly, and present stumps, provided with an opaque whitish sheath. It seldom attacks glabrous parts of the body. *M. audouini* is extremely common in England, but rare in the South of Europe (Italy), and extremely rare in the tropics. I have never seen cases of ringworm due to *M. audouini* in equatorial Africa or Ceylon, or in Louisiana, but a few cases have been described in Brazil, in Madagascar and in Senegal.

M. audouini seems to live only on the human subject, but closely allied species have been found by Fox in cats, by Bodin in dogs and by Bodin, Fox and others in horses.

Microsporum velveticum Sabouraud, 1907. Resembles closely *M. audouini*, but the cultures are more velvety, the duvet being white instead of grayish, and of closer growth; not inoculable into guinea-pigs. This species seems to be fairly common in North America.

Microsporum umbonatum Sabouraud, 1907. Found by Sabouraud in two cases of microsporosis of the scalp contracted in Russia. The appearance of the growth when it has reached complete development (about twenty-five to thirty days after inoculation) has been compared by Sabouraud to the appearance of an ancient round shield, with a central conical formation representing the umbo of the shield. It is not inoculable into guinea-pigs.

Microsporum tardum Sabouraud, 1909. Found by Sabouraud in cases of microsporosis capitis clinically identical with the type caused by *M. audouini;* differs from *M. audouini* by the growth being much slower and scantier, and the duvet being shorter.

Microsporum lanosum Sabouraud, 1907. *Synonym—Microsporon audouini* var. *canis* Bodin, 1897. Commonly found in dogs; may affect man, causing a type of severe tinea capitis; may also produce forms of tinea barbae and tinea corporis.

On Sabouraud's agar the growth is at first similar to *M. audouini*, only more abundant and more downy. Later, from twenty-five to thirty days after inoculation, the central portion of the growth becomes umbilicated, the depression being surrounded by a ring of snow-white duvet, which in old cultures may become yellowish. Pleomorphism is common.

Microsporum felineum C. Fox and Blaxall, 1896. Common in the cat in England, North America and Belgium; may infect man, attacking hairy and nonhairy regions of the body. On Sabouraud's agar the growth is rather abundant, discoid, with flattened surface, not showing any furrows and covered with a large amount of gray duvet. The fungus is easily inoculable into cats, dogs and guinea-pigs.

Microsporum minimum Le Calvé and Malherbe, 1898. *Synonyms—Microsporon audouini* var. *equinum* Bodin, 1896; *Trichophyton minimum* Le Calvé and Malherbe, 1898.

Common in fowls; may infect man, giving rise to a mild type of tinea corporis, in which cure is spontaneous.

On Sabouraud's and dextrose agar the growth is deeply furrowed, and in contrast to all other microsporons, duvet is absent, or, when present, is scanty, short and pinkish.

Microsporum fulvum Uriburú, 1907. Found in cases of tinea capitis in the Argentine. It grows rapidly on Sabouraud's agar, the growth presenting a central umbo, or projection, surrounded by a brownish powdery ring. The peripheral zone of the growth is covered with white duvet.

Microsporum pubescens Sabouraud, 1909. Discovered by Sabouraud in a case of tinea capitis contracted in New York. It grows rapidly on Sabouraud's medium, the culture being characterized by the presence of abundant but delicate silky duvet. At complete development, about thirty days after inoculation, the growth may have a flattened surface, or furrows, radiating from the center, may be present. The central portion, which is covered with rather long, white duvet, is encircled by a zone of powdery appearance; outside this there is the peripheral zone covered by the extremely delicate, characteristic, silky-like duvet.

Microsporum villosum Minne, 1907. Found in Belgium by Minne in a child suffering from ringworm of the hair clinically identical with the type caused by *M. audouini*. On Sabouraud's agar the growth at complete development is about 6 cm. in diameter; the central portion is flattened, with a powdery, slightly brown-

ish surface. This is surrounded by mammillary, downy formations, which decrease in size toward the periphery.

Microsporum tomentosum Pelagatti, 1909. Found by Pelagatti in Sardinia in a case of microsporosis capitis, clinically identical with the usual type caused by *M. audouini*. It grows rapidly on Sabouraud's agar. The growth at complete development has a somewhat flattened appearance, but several furrows are present, originating from the central portion, which may be umbilicated. The whole surface is covered by thin white duvet.

Microsporum iris Pasini, 1911. Discovered by Pasini in Italy in some cases of microsporosis capitis, somewhat different clinically from the usual type. The fungus grows well on Sabouraud's agar. At complete development, from twenty-two to twenty-six days after inoculation, the growth presents a central knob covered with white duvet, and surrounded by white and brick-red rings, alternating.

The microsporosis capitis due to this microsporon is characterized by the hairs remaining nearly of normal length, and presenting a white greenish discoloration.

Microsporum flavescens P. Horta, 1912. Isolated by Horta from some circinate squamous patches situated on the neck of a child in Brazil; grows rapidly on Sabouraud's agar; the growth is yellow; there is a depression at the center, from which radiate four or five shallow furrows; pleomorphic duvet appears quickly.

Microsporum depauperatum F. Guéguen, 1912. Isolated by Guéguen from some circinate, dry, squamous patches. In cultures the membrane of some nucleal filaments presents peculiar thickenings. Spore-bearing hyphae are not so well differentiated as in other species.

Microsporum scorteum Priestley, 1914. This parasite resembles *M. fulvum* Uriburú, 1909, both morphologically and culturally, and may be identical therewith, as the descriptions given in Europe of Uriburú's parasite are scanty. It was found by Priestley in Townsville in tropical Queensland, and occurred in two circular inflamed areas on the calf of a boy's leg. There was not any scaliness, and the hairs were not visibly altered, though microscopically they contained mycelium and a few spores.

On Sabouraud's maltose agar the organism grew rapidly, producing a growth like a piece of chamois leather. It slowly digested milk, which it did not clot. Multiseptate spores were abundant, but lateral conidia were few, from 3 to 4 by 2 to 3 microns in size, while chlamydospores were infrequent. Nodular bodies like those found by Sabouraud in *T. lacticolor* were found. Spirals were frequent and pectinate bodies rare. Duvet was formed.

Microsporum ferrugineum Ota, 1921. *Synonym—Grubyella ferruginea* Ota. Growth on dextrose and maltose agars rusty red; common in Manchuria.

Genus *Trichophyton* Malmsten, 1845.

Definition.—Trichophytoneae with mycelial filaments and spores present in the lesions and conidial-bearing hyphae in cultures, only attacking hairs and entirely of human origin; seldom pyogenic.

Type Species.—Trichophyton tonsurans Malmsten, 1845.

General Considerations.—During their parasitic life the species of the genus *Trichophyton* vegetate according to two types: (1) mycelial filaments; (2) mycelial spores.

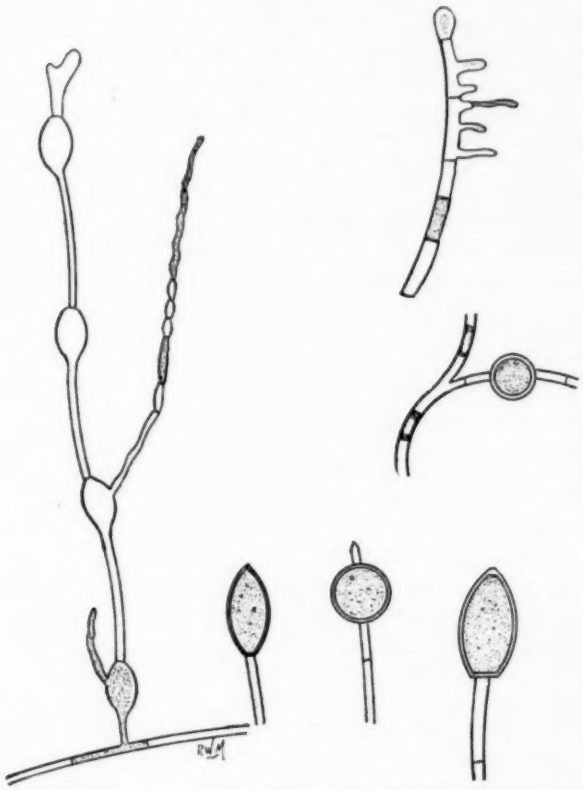

Fig. 29.—Microsporum ferrugineum Ota (after Ota and Langeron).

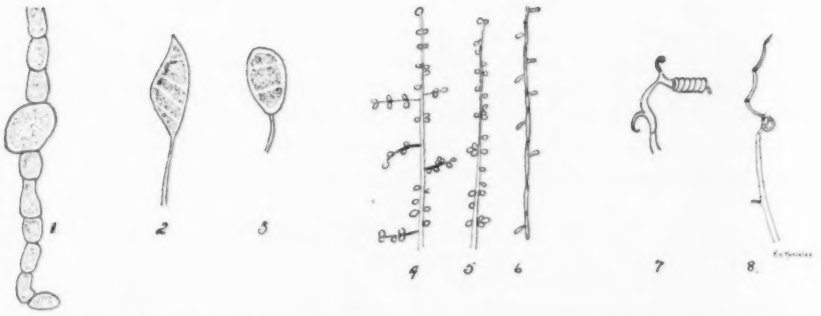

Fig. 30.—(1) Trichophyton—arthrospores and chlamydospore; (2) Trichophyton—septate spindle bodies; (3) Trichophyton—septate spindle bodies; (4) Trichophyton—spore bearing hyphae; (5) Trichophyton—spore bearing hyphae; (6) Microsporum—spore bearing hypha; (7) and (8) Trichophyton—spiral bodies.

The mycelial filaments consist of long cylindric cells, separated by septums. The so-called mycelial spores are simply a modification of the mycelial filaments, due to the septums being much closer, so that the cells limited by them are almost as broad as they are long. The term "mycelial spores" is incorrect, as they are not organs of reproduction, but only vegetative organs.

When the shape of these mycelial spores, or sporulating mycelia, or arthrospores is roundish or oval, the filament takes a moniliform appearance. Moreover, these cells are easily dissociated. Such a type is called "fragile mycelium." To this type belongs, for instance, *Trichophyton sabouraudi* R. Blanchard.

When the mycelial spores are square, the filament straight and its articles long, the mycelium is called "resistant." This type is observed, for example, in *Trichophyton tonsurans* Malmsten.

Cultivation.—Most trichophytons can be cultivated; some cannot. The best medium is Sabouraud's maltose agar, the composition of which is as follows:

Maltose	4.0 Gm.
Peptone Chassaing	1.0 Gm.
Agar	1.5 Gm.
Distilled water	100.0 cc.

On this medium, however, pleomorphism is of frequent occurrence.

Dextrose Agar.—Slightly acid dextrose agar 4 per cent is also good and has been used for many years by Pinoy, Sabouraud, Chalmers, me, and others.

Pollacci's medium has the following formula:

Broth (prepared by boiling 500 Gm. of meat finely triturated in 1,000 cc. of distilled water)	100.0 cc.
Peptone Witte	1.0 Gm.
Sodium chloride	0.5 Gm.
Agar	1.5 Gm.
Dextrose	7.0 Gm.

Pleomorphism.—Cultures on maltose and other sugar agars of all trichophytons, with the single exception of *T. sabouraudi,* as they grow old, lose their characteristics and become covered with abundant white duvet. In these cultures, which can be considered degenerate and are generally called "pleomorphic," organs of fructification are usually absent. By transplanting these cultures, one will obtain the same pleomorphic, downy type of growth; as a rule, the growth will never show the characteristics of the original young cultures obtained directly from the lesions. It is impossible to return to the original type, even by animal inoculations.

To prevent pleomorphism, Sabouraud advises the following medium:

Agar	1.8 Gm.
Peptone Chassaing	3 to 5.0 Gm.
Water	100.0 cc.

On this medium the growth of the various trichophytons is much less abundant than on sugar mediums, but the cultures are fairly characteristic, and they do not become pleomorphic.

Reproduction.—This takes place by:

1. Lateral and terminal conidia, supported by short sterigmas.
2. Chlamydospores; these are rare.
3. Large terminal septate and unseptate spindles. These spindles do not show at their free extremities the hairlike structures present in the spindles of the genus *Microsporum.*

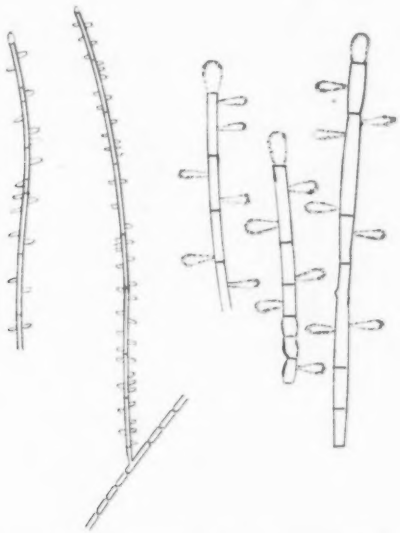

Fig. 31.—Trichophyton sabouraudi Blanchard (after Sabouraud).

Classification.—The principal species of the genus *Trichophyton* arranged chronologically are as follows:

1. *T. tonsurans* Malmsten, 1845.
2. *T. sabouraudi* R. Blanchard, 1895.
3. *T. violaceum* Bodin, 1902.
4. *T. sulphureum* C. Fox, 1908.
5. *T. glabrum* Sabouraud, 1909.
6. *T. fumatum* Sabouraud, 1909.
7. *T. effractum* Sabouraud, 1909.
8. *T. circonvolutum* Sabouraud, 1909.
9. *T. regulare* Sabouraud, 1909.

10. *T. umbilicatum* Sabouraud, 1909.
11. *T. exsiccatum* Uriburú, 1909.
12. *T. polygonum* Uriburú, 1909.
13. *T. soudanense* Joyeux, 1912.
14. *T. currii* Chalmers and Marshall, 1914.

These may be recognized as follows:

A. Condition of mycelium in hair not definitely stated, but probably that of the Crateriform subdivision as mentioned later.

(1) In cultures convoluted—*Circonvolutum.*

B. Condition of mycelium in hair definitely stated.

I. Mycelium in hair resistant to caustic potash, segments characteristically quadrangular in shape, with double contour, from 4 to 6 microns in breadth, arranged in fairly straight ladder-like rows—Crateriform subdivision.

(*a*) Cultures colored and with craters—*Tonsurans* group.

(2) Yellow in center, white at periphery—*Tonsurans.*

(3) As *Tonsurans,* but, when old, cracked and dry—*Effractum.*

(4) Orange-red center, remainder sulphur colored—*Sulphureum.*

(5) Golden yellow convoluted center, becoming crateriform later—*Soudanense.*

(6) When old yellowish brown—*Fumatum.*

(*b*) Cultures white with craters—*Umbilicatum* group.

(7) Deeply umbilicated with aureola—*Umbilicatum.*

(8) Slow growth, surface cracked with dry appearance—*Exiccatum.*

(9) Growth at first roundish and then polygonal—*Polygonum.*

(*c*) Cultures white with knoblike center—*Currii* group.

(10) Does not form duvet—*Currii.*

II. Mycelium in hair not resistant to caustic potash; segments rounded, 4 to 7 microns in diameter; not arranged, as a rule, in rows, but if a row is visible it resembles a string of beads and not a ladder—*Acuminate* subdivision.

(*a*) Without acuminate center—*Violaceum* group.

(11) Primary growth violet.

(A) Most strains do not melt gelatin rapidly.

(1^1) Ordinary amount of scaling on the head—*Violaceum.*

(2^1) Enormous numbers of scales, followed at times by permanent baldness—var. *Decalvans.*

(B) Melts strong gelatin rapidly, beginning as soon as growth appears—var. *Khartoumense.*

(12) Primary growth white—*Glabrum.*

(*b*) With acuminate center—*Sabouraudi* group.

(13) Without duvet when old—*Sabouraudi.*

(14) With duvet when old—*Pilosum.*

Genus *Neotrichophyton* Castellani and Chalmers, 1918.

Definition.—Trichophytineae with mycelium and spores present in the lesions, and conidia-bearing hyphae in cultures, attacking hairs, but with mycelial spores and filaments outside the hair shaft.

Type Species.—Neotrichophyton flavum Bodin, 1902.

Classification.—There are only two species, which may be distinguished as follows:

A. Cultures cerebriform—*Flavum.*

B. Cultures crateriform and creased—*Plicatile.*

Genus *Ectotrichophyton* Castellani and Chalmers, 1918.

Definition.—Trichophytoneae with mycelium and spores present in the lesions and conidia-bearing hyphae in cultures; attack hairs and hair follicles, growing in and on the surface of the hairs; often pyogenic and of animal origin.

Type Species.—Ectotrichophyton mentagrophytes Robin, 1853.

Classification.—The genus is capable of division into three subgenera by the following characters.

A. *Ectotrichophyton:*

With small spores about 3 to 4 microns in diameter, forming a sheath outside the hair shaft, on dissociation of which they are seen to form chains; with sinuous and quadrangular hyphal segments, together with spores of varying diameter and air-bubbles, inside the hair shaft; with cultures easily obtainable, of rapid growth and of considerable vitality, characterized by plaster-like or floury centers surrounded by a fringe, when grown on Sabouraud's proof mediums, and by successful inoculations into animals—subgenus *Microtrichophyton.*

B. *Ectotrichophyton:*

With large spores about 5 to 7 microns in diameter, forming a sheath outside the hair shaft, on dissociation of which they are seen to form chains, and with sinuous hyphal segments, together with large-sized spores and air-bubbles, inside the hair shaft; with cultures easily obtainable, but of slow growth in temperate climates, though much more rapid in tropical climates, characterized by their tendency to resemble (at all events when old) those of achorions, and capable of being inoculated into animals.

I. With early formation of a duvet—subgenus *Ectotrichophyton.*

II. Culture sooner or later resembles that of *Achorion schoenleini*—subgenus *Favotrichophyton.*

Ectotrichophyton (Favotrichophyton) Castellani and Chalmers, 1918.

Definition.—Ectotrichophyton with characters given previously for *Favotrichophyton.*

Type Species.—Ectotrichophyton discoides Sabouraud, 1909.

Classification.—*Favotrichophyton* species which are known are:

E. verrucosum Bodin, 1902.

E. ochraceum Sabouraud, 1909.

E. album Sabouraud, 1909.

E. luxurians Brault and Viguier, 1914.

These may be differentiated as follows:

A. Condition of mycelium in hair not definitely stated.

I. Young cultures white, and soon resembling those of *Achorion schoenleini*, but sunk into the medium—*Album.*

B. Condition of mycelium in hair that of an ecto-endothrix.

II. Cultures gray, humid, with verrucose surface—*Verrucosum.*

III. Young cultures yellow ochre—*Ochraceum.*

IV. Cultures yellowish brown or grayish yellow, cupola-shaped, humid with usually smooth surfaces, and not resembling *Achorion* cultures until old—*Discoides.*

V. Rapid development—*Luxurians.*

Genus *Atrichophyton* Castellani and Chalmers, 1918.

Definition.—*Trichophytoneae* with mycelium and spores present in the lesions and conidia on short stalks, but they do not attack hairs.

Type Species.—*Atrichophyton albiscicans* Nieuwenhuis, 1907.

Classification.—The following table will indicate the characters of the species:

A. Has been cultivated.

I. Cultures whitish with powdery surface—*Albiscicans.*

II. Cultures brownish mass with deep furrows—*Macfadyeni.*

III. Cultures pinkish with violet tinge—*Viannai.*

B. Has not been cultivated.

I. Spores are numerous and of various sizes—*Blanchardi.*

II. Spores are few and about 4 microns in diameter—*Ceylonense.*

INCERTAE SEDIS

Trichophyton balcaneum Castellani, 1916. Found in cases of peculiar condition of the scalp in the Balkans, which clinically resembled more a diffuse type of severe pityriasis sicca than a trichophytic condition.

When grown from scales on dextrose agar, it slowly formed a somewhat crinkled whitish growth. An interesting characteristic of this fungus is that apparently it does not become pleomorphic, even after numerous transplantations. Gelatin is rapidly liquefied. It does not form gas in any carbohydrate medium.

Microscopically the fungus shows features intermediate between a trichophyton *sensu lato*, a microsporum and an achorion.

Trichophyton louisianicum Castellani, 1926. Found by me in cases of tinea capitis and tinea corporis in New Orleans.

This classification of this fungus is somewhat difficult. For the time being I have placed it in the genus *Trichophyton,* section incertae sedis.

The growth is characteristic in dextrose agar; the central portion is covered with white duvet; the periphery is yellow or yellowish; the edge of the growth in fully developed cultures may be deep orange or tangerine. In oldish cultures in the submerged portion of the growth, dark red spots are not rarely seen.

The fungus can be separated from *T. sulphureum* found in England by the absence of crateriform colonies and of speckled appearance; from *Microsporum flavescens* by the absence of furrows originating

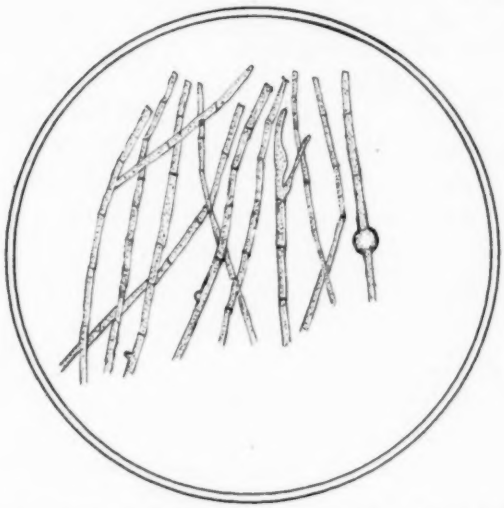

Fig. 32.—Trichophyton louisianicum (hanging-drop culture).

from the central portion; moreover, *Microsporum flavescens* microscopically shows all the characteristics of the genus *Microsporum; T. ochraceum* is cerebriform and culturally, closely resembles *Achorion schoenleini; T. flavum* Bodin is typically cerebriform, so much so that Sabouraud called it *T. cerebriforme.*

Genus *Achorion* Remak, 1845.

Definition.—Trichophytoneae with mycelial filaments and spores in the lesions; in cultures, conidial-bearing hyphae are present, with spores situated laterally and apically; fusiform bodies in cultures in the form of swollen claviform ends of filaments; yellow favic scutula are present in the lesions.

Type Species.—Achorion schoenleini Lebert, 1845.

Remarks.—The fungi belonging to this genus often, during parasitic life, show much longer mycelial segments than trichophytons and microsporons; masses of them, developing in hair follicles, form the well known sulphur-colored scutula which always develop round a hair. In the hairs, the mycelial tubes are frequently trichotomous and tetrachotomous, forming structures which have been compared in appearance to the skeleton of the human foot, and called "favus tarsi."

Cultures.—Sabouraud has noted that in hanging-drop cultures the spores sometimes develop slowly, sometimes rapidly. When the development is slow, the formation of numerous chlamydospores of various sizes, with a double contour membrane, takes place. When the development is rapid, one notes that the mycelium ramifies quickly in every direction, with the presence of few or no chlamydospores. The following structures may be noted:

1. *Claviform Bodies.*—The terminal portion of some filaments becomes swollen and claviform. These claviform filaments have been compared by some authorities to the "spindles" of the trichophytons and microsporons, but they are slenderer, and not septate. The French authors call these formations "chandeliers favique," because their shape somewhat resembles a candlestick.

2. *Favus Yellow Bodies.*—The protoplasm of some filaments collects itself at the terminal ends, the filaments becoming much thinner, and terminating in roundish or oval bodies, which must be considered terminal chlamydospores. It should be noted that in the typical achorions of human origin conidia-bearing hyphae are not seen, while these are present in the achorions of animal origin, in which separate spindles may be present.

Mediums.—Achorions grow well on all the usual sugar mediums, especially Sabouraud's agar and dextrose agar. They generally liquefy gelatin fairly rapidly.

Pleomorphism.—This is common in all achorions. If a culture becomes pleomorphic, it is impossible to make it revert to the original type.

Transmission.—In the case of achorions of human origin, infection takes place from man to man; in the case of achorions of animal origin, infection takes place from the lower animals. It is not impossible that achorions may live saprophytically in nature.

TABLE 10.—*Achorions*

Genus		
Achorion Remak, 1845	Of human origin (typical)	A. schoenleini Lebert, 1845
	Of animal origin (nontypical)	A. quinckeanum Zopf, 1890
		A. gypseum Bodin, 1907
		A. arloingi Blanchard, 1891

Achorions may be recognized as follows

A. Whitish yellow cerebriform colonies—*Schoenleini.*

B. White downy colonies—*Quinckeanum.*

C. Yellowish colonies—*Gypseum.*

There are several less known species, among which is *A. annulosum* Cayalbon, 1914.

A. arloingi has not been properly described.

Genus *Epidermophyton* Lang, 1879, emendavit Sabouraud, 1907.

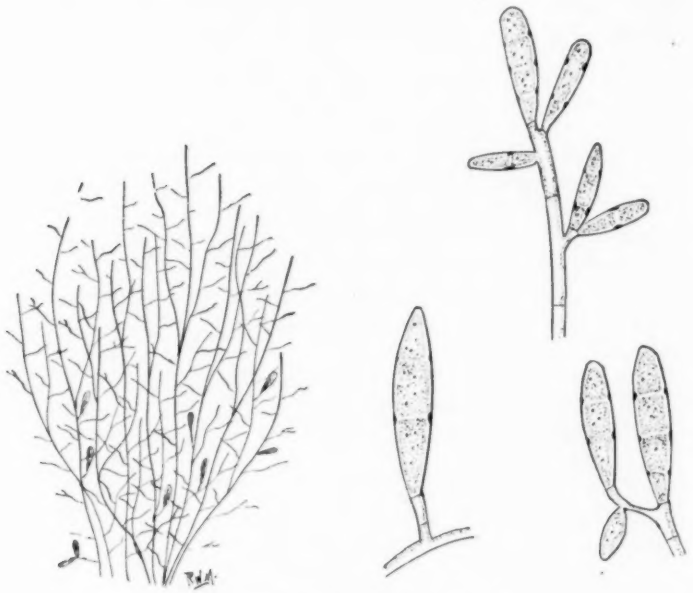

Fig. 33.—Epidermophyton cruris.

Definition.—Trichophytoneae with mycelial filaments and spores present in the lesions and with pluriseptate spindles present in the cultures; does not attack the hairs or hair follicles, but grows in the superficial layers of the epidermis.

Type Species.—Epidermophyton cruris Castellani, 1905.

Remarks.—The fungi belonging to this genus, which has been investigated by Sabouraud and me, grow superficially on the skin without invading the hairs and hair follicles; they do not produce suppuration. Reproduction takes place principally by pluriseptate spindles, with, on the average, from four to six cells. The septums, as noted by Pinoy, may not be complete, and the cavities may communicate. Spiral hyphae, as found in most species of *Trichophyton,* are absent; pectinate structures, as found in the microsporons, are absent;

spore-bearing hyphae, with lateral conidia of type *Acladium,* as noted both in the trichophytons and in the microsporons are not present. The cultures undergo rapid degenerative changes, losing their characteristics, and becoming covered with abundant, uniform, long, whitish duvet (pleomorphism). They are not inoculable into guinea-pigs, except Pinoy's *Epidermophyton simii.* The species so far known have been isolated from human lesions, except the epidermophyton discovered by Pinoy in monkeys.

TABLE 11.—*Epidermophytons*

Genus	Principal Species
Epidermophyton Lang, 1879, emendavit Sabouraud, 1907	E. cruris Castellani, 1905
	E. perneti Castellani, 1907
	E. rubrum Castellani, 1907

These species may be recognized by their growths on Sabouraud's agar as follows:

A. Peculiar light yellow (lemon yellow)—*Cruris.*
B. Pinkish—*Perneti.*
C. Deep red—*Rubrum.*

Less known species are *E. interdigitale* Priestly, 1917; *E. plurizoniforme* McCarthy, 1925; *E. lanoroseum* McCarthy, 1925; *E. niveum* McCarthy, 1925, and *E. salmoneum* de Mello.

For *E. simii* Pinoy, 1911, the genus *Pinoyella* has been created.

Genus *Endodermophyton* Castellani, 1909.

Definition.—Trichophytoneae with mycelial filaments and spores in the lesions, but no conidial filaments in cultures; pluriseptate spindles unknown; grows between the superficial and deep layers of the epidermis, and does not attack the hair or hair follicles.

Remarks.—The fungi belonging to this genus are characterized by their growth between the superficial and deep strata of the epidermis, forming an interlacing felt of mycelia, which detaches the horny and granular layers from the rete Malpighi. They do not invade the hair follicles and do not cause suppuration. They have been cultivated by me.

Cultures.—Botanically, these fungi, in the appearance of the cultures, are closely allied to achorions, as remarked by Sabouraud and Pinoy, who have examined my cultures. Attempts at cultivation failed for a long time, as these fungi generally do not grow on solid mediums direct from the scales. These, after being treated with alcohol for from five to ten minutes, must be placed in dextrose-broth tubes, one scale in each tube.

TABLE 12.—*Fermentative Characters of Certain Monilias and Bacteria* *

	Dextrose	Levulose	Maltose	Galactose	Saccharose	Lactose	Mannitol	Dulcitol	Dextrin	Raffinose	Arabinose	Adonitol	Inulin	Sorbitol	Starch	Glycerol	Inositol	Salicin	Amygdalin	Isodulcitol	Erythrytol
Monilia balcanica Castellani	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Monilia krusei Castellani	+	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Monilia pinoyi Castellani	+	+	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Monilia metalondinensis Castellani	+	+	+	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Monilia tropicalis Castellani	+	+	+	+	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Monilia metalondinensis rhoi Castellani	+	+	0	+	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Monilia bronchialis Castellani	+	+	+	0	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Monilia macedoniensis (M. macedoniensoides) Castellani	+	+	0	+	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bacillus coli-communis Escherich, strain 0	+	+	+	+	0	+	+	+	+	+	+	0	0	+	0	+	0	+	0	+	0
Bacillus coli-communior, strain 0 (pseudocoscoroba)	+	+	+	+	+	+	+	+	+	+	+	0	0	+	0	+	0	+	0	+	0
Bacillus paratyphosus B Schottmüller, var. M	+	+	+	+	0	0	+	+	+	0	+	0	0	+	0	0	+	0	0	+	0
Bacillus paratyphosus A Schottmüller	+	+	+	+	0	0	+	+	+	0	+	0	0	+	0	0	0	0	0	+	0
Bacillus columbensis Castellani	+	+	+	+	0	0	+	+	0	0	+	0	0	+	0	+	0	+	0	+	0
Bacillus asiaticus Castellani	+	+	+	+	+	0	+	0	+	+	+	0	0	+	0	+	0	0	0	+	0
Bacillus pseudo-asiaticus Castellani	+	+	+	+	+	0	+	+	+	+	+	0	0	+	0	+	0	+	0	+	0
Bacillus morgani Castellani and Chalmers, strain S	+	+	0	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bacillus orleanensis Castellani	+	+	+	+	+	+	+	+	+	+	+	0	0	+	+	0	0	+	+	+	0
Monilia pseudotropicalis IV Castellani	+	+	0	+	+	+	0	0	0	+	0	0	+	0	0	0	0	0	0	0	0

* In this and the following tables and in the mycologic formulas, + indicates gas; 0, absence of gas; simple acid fermentation is not taken into account.

Most of the tubes become contaminated with bacteria, but in those which remain clear, after a time (from five to ten days), a few delicate, short, white filaments will be seen originating from the scale. The growth slowly increases until, after from three to four weeks, it takes the appearance of a small, white, fluffy mass, with a dark spot (the scale) in the center. Portions of the broth cultures are sown on solid sugar mediums, on which growth takes place easily at that time. Fungi can then be indefinitely subcultured on solid mediums. The fungi grow much more abundantly on dextrose agar 4 per cent, than on Sabouraud's or any other mediums.

Reproduction.—In hanging-drop cultures, long mycelial filaments are seen; conidia-bearing hyphae are not present; reproduction occurs apparently by sprouting, branching taking place; but further investigation is necessary on the subject.

Pleomorphism.—Pleomorphism is much less marked than in the trichophytons, epidermophytons and achorions, but old cultures may lose their characteristics, becoming covered with duvet.

Endodermophytons are found in man in the following order of frequency:

E. tropicale Castellani.
E. indicum Castellani.
E. concentricum Blanchard.
E. mansoni Castellani.

These may be recognized as follows:

A. Dextrose agar cultures amber colored, no or only slight duvet—*Tropicale.*
B. Dextrose agar cultures red.
  I. Causes tinea imbricata—*Indicum.*
  II. Causes tinea intersecta—*Castellanii.*
C. Dextrose agar cultures after a time black.
  I. Black pigmentation fairly slow—*Concentricum.*
  II. Pigmentation very rapid—*Mansoni.*

Genus *Pinoyella* Castellani and Chalmers, 1908.

Definition.—*Trichophytoneae* with mycelial filaments and spores in the lesions, and in cultures conidia-bearing hyphae, with the spores situated laterally only.

Type and Only Species.—*Pinoyella simii* Pinoy, 1911; *Epidermophyton simii* Pinoy, 1911.

The fungus was discovered by Pinoy in a trichophytic-like eruption observed on a monkey. On Sabouraud's agar, the growth is at first yellowish orange, somewhat similar to *Epidermophyton cruris;* later, the growth is whitish and covered with white duvet.

Pinoy's fungus has several interesting botanic features, some of which are those of the genera *Microsporum* and *Trichophyton.* In con-

trast to the typical epidermophytons, it presents spore-bearing hyphae with lateral conidia, and is inoculable into guinea-pigs, in which it produces a trichophytic-like eruption.

Ota and Langeron have devised a new classification of the fungi belonging to the genera *Trichophyton, Microsporum, Epidermophyton* and *Achorion.* They emphasize the point that the usual classification of these fungi is based, to a great extent, on the different pathologic lesions they produce rather than on purely botanical characters. They consider all these fungi, except *T. currii* Chalmers and Marshall, 1914, to belong to the order *Hyphomyceti,* family *Conidiosporeaceae,* subfamily *Closterosporeae* (new subfamily), and separate them into the following genera:

Trichophyton Malmsten, 1848, emendavit Ota and Langeron, 1923.

Sabouraudites Ota and Langeron, 1923.

Bodinia Ota and Langeron, 1923.

Endodermophyton Castellani, 1909.

Grubyella Ota and Langeron, 1923.

Epidermophyton Lang, 1879, emendavit Ota and Langeron, 1923.

In the foregoing classification the genera *Microsporum* and *Achorion* disappear. For the old *Trichophyton currii* Chalmers and Marshall, which produces rudimental perithecia they have created the genus *"Ateleothylax"* Ota and Langeron (family *Gymnoascaceae,* order *Ascomyceti*).

These genera may be recognized as follows:

A. Ascospores and perithecia absent.

I. Aleurospores (lateral conidia) present in large numbers, "fuseaux" (terminal pleuriseptate macroconidia) absent or scanty, denticulated and spiral structures absent—*Trichophyton.*

II. Aleurospores (lateral conidia) numerous, "fuseaux" present, denticulated and spiral structures present—*Sabouraudites.*

III. Aleurospores (lateral conidia) absent or rudimentary, "fuseaux" numerous—*Epidermophyton.*

IV. Aleurospores (lateral conidia) absent or rudimentary, "fuseaux" absent, chlamydospores and claviform bodies often well marked and numerous—*Grubyella.*

V. Aleurospores (lateral conidia) absent or rudimentary "fuseaux" absent, arthrospores present in small chains—*Bodinia.*

VI. Same as in part V, but arthrospores not so well defined—*Endodermophyton.*

B. Rudimentary perithecia present—*Ateleothylax.*

From the recent investigation of Pollacci and Nannizzi it would appear that a number of fungi of the genus *Trichophyton,* etc., may produce perithecia and ascospores after prolonged cultivation on special mediums such as bird's feathers; this would invalidate to a great extent Ota and Langeron's new classification.

Family *Aspergillaceae.*

Definition.—Aspergillales with compact peridium, small sessile closed perithecia.

Type Genus.—Aspergillus Micheli, 1729.

Classification.—The genera of *Aspergillaceae* can be recognized as follows:

A. Spores unicellular.
  I. Perithecium beaked—*Microascus.*
  II. Perithecium not beaked.
    (*a*) Perithecia with appendages—*Cephalotheca.*
    (*b*) Perithecia without appendages.
      1. Conidiophores absent—*Thelavia.*
      2. Conidiophores present.
        (A) Conidia solitary—*Aphanoascus.*
        (B) Conidia in chains.
          (1) Conidiophores simple—*Emericella.*
          (2) Conidiophores enlarged apically and bearing sterigmas.
            (1^1) Sterigmas simple—*Aspergillus.*
            (2^1) Sterigmas branched—*Sterigmatocystis.*
          (3) Conidiophores branched.
            (1^1) Sympodially branched—*Eurotiopsis.*
            (2^1) Bushy branched.
              (a^1) In bundles, perithecia stalked— *Penicililopsis.*
              (b^1) Not in bundles, perithecia sessile—*Penicillium.*

B. Spores bicellular—*Testudina.*

One is concerned with the genera *Penicillium, Aspergillus* and *Sterigmatocystis.*

Genus *Penicillium* Link, 1809.

The whole fruit-bearing hypha with its sterigmas and conidia resembles a hair pencil, hence the name of the genus (*Penicillium* = hair pencil). The conidiophore hypha shows verticillate branches, which give rise to slender fusiform formations (sterigmas) abstricting chains of conidia.

The following species have been found parasitic in man:

P. crustaceum Linnaeus, 1763.
P. minimum Siebenmann, 1889.
P. barbae Castellani, 1907.
P. montoyai Castellani, 1907.
P. pruriosum Salisbury.
P. brevicaule—var. *hominis*—Brumpt and Langeron, 1910.

P. crustaceum: bronze spores about 4 microns in diameter.

P. minimum: spores from 2½ to 3 microns, brownish black.

P. montoyai: spores from 3 to 4½ microns, dark grayish.

P. brevicaule: spores spherical, occasionally oval, chocolate colored.

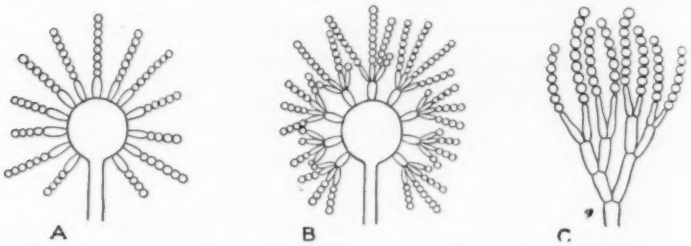

Fig. 34.—*A,* Aspergillus; *B,* Sterigmatocystis; *C,* Penicillium. After Brumpt.)

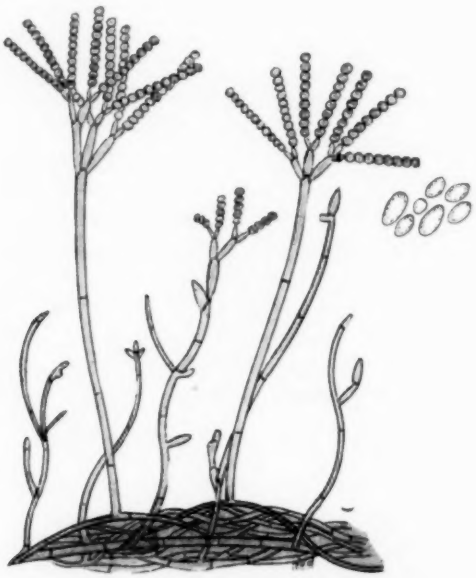

Fig. 35.—Penicillium crustaceum.

P. barbae: covers probably several species; grows on hairs of moustache and beard, producing small, grayish or dark grayish and even black nodules.

P. pruriosum: found by Salisbury in a case of pruritus vaginae.

Genus *Aspergillus* Micheli, 1725.

The conidiophore hyphae are not ramified, and they terminate into ovoid or roundish formations, which support numerous claviform elements (sterigmas), each of which supports a chain of roundish conidia.

Aspergilli are generally saprophytes, but they may become parasites. They are easily grown on acid mediums, liquid or solid, and also on alkaline mediums. Iron and manganese have a favorable influence on the growth and sporulation of these fungi.

A medium much used is Raulin's liquid, the formula of which is: cane sugar, 70 Gm.; tartaric acid, 4 Gm.; ammonium nitrate, 4 Gm.; ammonium phosphate, 0.6 Gm.; potassium carbonate, 0.6 Gm.; magnesium carbonate, 0.4 Gm.; ammonium sulphate, 0.25 Gm.; zinc sulphate, 0.07 Gm.; ferrous sulphate, 0.07 Gm.; potassium silicate, 0.07 Gm.

Fungi of the genus *Aspergillus*, when growing parasitically in the tissues, often lose their characteristics; the typical fructifications are absent, and only mycelial threads and roundish or oval yeastlike bodies are seen.

The principal species may be differentiated with some difficulty as follows:

A. Green species:

I. Spores 5 microns and more; can hardly be differentiated—*Repens, Flavus.*

II. Spores less than 5 microns.

(*a*) Lives saprophytically; green on acid mediums, brownish black on alkaline or neutral mediums.—*Fumigatus.*

(*b*) Not known to live saprophytically.

1. Similar to *Fumigatus* but conidial chains long—*Jeanselmei.*

2. Pathogenic for rabbits—*Malignus.*

3. Found in bronchial sputum—*Bronchialis.*

B. Blackish brown species—*Nigrescens.*

C. Golden, brownish, gold-brown or reddish—*Herbariorum.*

Genus *Sterigmatocystis* Cramer, 1859.

Definition.—*Aspergillales* with conidiophores terminating in roundish or ovoid formations, on which are situated short cylindric structures—primary sterigmas—surmounted by similar elements—secondary sterigmas. Each of the secondary sterigmas supports a chain of roundish conidia.

Remarks.—The genus was created by Cramer for a fungus found in a man's ear.

Type Species.—Sterigmatocystis antacustica Cramer, 1859.

Classification.—The two species of importance can be recognized as follows:

A. Young conidial forms green; later strongly gray to brown; conidia small, 3 microns in diameter—*Nidulans.*

B. Conidial forms blackish brown; conidia small, 2.5 microns in diameter—*Antacustica.*

(To be continued)

THE TEETH IN CASES OF CONGENITAL SYPHILIS

ROENTGEN-RAY STUDIES OF UNERUPTED TEETH *

R. V. QUINLAN, M.D.

MERIDEN, CONN.

The first contribution to medical literature on the subject of dental dystrophies in congenital syphilis was that of Hutchinson, who described the upper central incisors in 1857. He depicted them as being peg-shaped and showing a cresentic notch on their incisal edge. He declared that this deformity was characteristic and was to be considered pathognomonic evidence of congenital syphilis. His views were vigorously contested by Parrot, who saw in them only evidence of rachitis, and by Magitot, who described a similar condition in the jaw of a cow, due to eclampsia.

In 1884, Moon described the hypoplastic first molar, which he likewise attributed to congenital syphilis.

In 1908, Cavallaro [1] of Florence, Italy, published an extensive article in *Dental Cosmos*, in which he purports to show that dentification of the first molar begins about the sixth month of fetal life and that of the incisor the first month after birth. He expressed the view that congenital syphilis is most active during the latter part of pregnancy and early extra-uterine life, and that as this was the period of dentification of the first molars, their development is impeded and the deformities result.

More recently, Karnosh,[2] in a comprehensive piece of work on the histogenesis of syphilitic hypoplasia, showed defects in the different layers of enamel, which occurred principally after birth. From a clinical point of view, two types of teeth are generally recognized as being due to congenital syphilis. These are the hutchinsonian incisor and the mulberry molar. Both of these deformities occur in the permanent set of teeth.

Many other deformities of both the temporary and the permanent teeth have been ascribed to syphilis. Cross-ridging, longitudinal furrowing, pitting, microdontia and delayed eruption have all had their advo-

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* Thesis presented to the faculty of Dermatology-Syphilology of the Graduate School of Medicine of the University of Pennsylvania in partial fulfilment of the requirements for the degree of M.Sc. (Med).

1. Cavallaro, Joseph: Syphilis in its Relation to Dentition, Dental Cosmos **50**:1161, 1908-1909.

2. Karnosh, L. J.: Histopathology of Syphilitic Hypoplasia of the Teeth, Arch. Derm. & Syph. **13**:25 (Jan.) 1926.

cates, but sufficient evidence has not been forthcoming to permit the bulk of the medical and dental professions to subscribe to their views.

THE HUTCHINSONIAN INCISOR

The upper central incisor develops from three points of ossification or denticles during the first year of extra-uterine life, and the normal

Fig. 1.—Typical hutchinsonian teeth in congenital syphilis.

Fig. 2.—Typical hutchinsonian teeth in congenital syphilis.

progress of ossification may be impeded or arrested by morbid conditions arising during this period. In congenital syphilis the middle denticle is repressed, and the two lateral denticles proceed in an orderly fashion. The cutting edge of the tooth, lacking that portion produced by the middle denticle, bears a crescentic notch on its anterior surface.

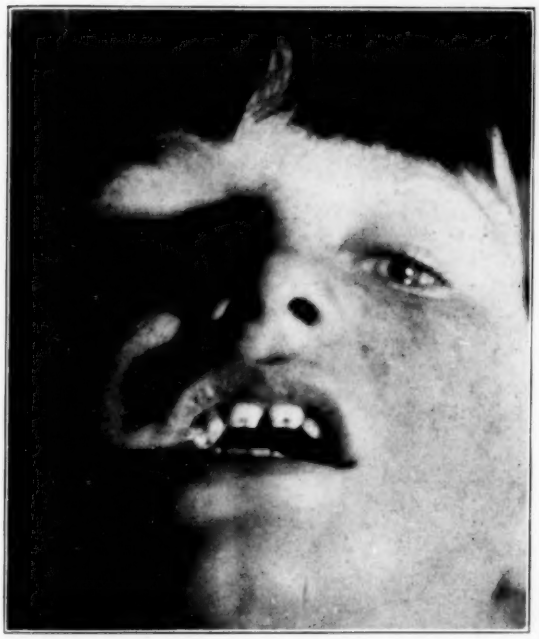

Fig. 3.—Typical hutchinsonian teeth in congenital syphilis.

Fig. 4.—Nonsyphilitic dental deformity.

Figures 1, 2 and 3 show typical hutchinsonian teeth. The hutchinsonian incisor has certain characteristics: It occurs generally in the upper central incisors, although the two upper laterals and the four lower incisors may show the same characteristic deformity. The teeth are usually shorter than normal; they are thicker anteroposteriorly; they converge toward the cutting edge so that this edge has a lesser horizontal diameter than the alveolar end. The sides may be straight or rounded, so-called barrel shaped, and a crescentic notch is present on the cutting edge.

Fig. 5.—The mulberry molar.

Instead of being cut at right angles, this notch is beveled from before backward. The teeth are usually but not invariably widely separated.

This condition should not be confused with nonsyphilitic dental hypoplasia, which is due to severe infections or toxemia occurring during the latter part of pregnancy or early life of the infant. An illustration of this deformity is shown in figure 4.

THE MULBERRY MOLAR

The mulberry molar, which is said by Fournier to be of equal diagnostic value with that of the incisor, is characterized by a hypoplastic

crown and a roughened, irregular occlusal surface surmounted by defective cusps. If seen shortly after eruption, this is characteristic. However, decay frequently sets in early, and the cusps disappear and are replaced by depressions or pits (figs. 5).

STUDY OF CASES

A study of fifty cases was made in the congenital syphilitic clinic of Dr. Jay F. Schamberg at the Graduate School of Medicine of the University of Pennsylvania. All the patients were known to be syphilitic, and when a doubt existed they were eliminated from the group. The age incidence was between 5 weeks and 16 years, and the number of males and females was 20 and 30, respectively. Caries was common in nearly all the children; it occurred in thirty-nine of the fifty cases. Twenty-seven patients were considered normal except for caries. Typical hutchinsonian incisors were found in eleven of the cases. In classifying these, only the ones showing the characteristic notch were included. These were found most frequently in the upper central incisors. Some, however, showed the deformity in one of the upper central incisors only, and one case showed it in one of the upper laterals, the other incisors not showing any deformity. Another case showed the deformity in all of both the upper and the lower incisors.

The pegged tooth that is thickened anteroposteriorly and converges toward the biting edge without notching was present in four cases, but this type of tooth is not included under the typical hutchinsonian incisors.

The mulberry molar ocurrred in four cases. The tubercle of Carabelli, which is an extra cusp on the inner surface of the first upper molar, was present in three cases. Sabouraud placed considerable confidence in this as a diagnostic landmark, but he does not receive the support of many others on this point. Hypoplasia of the incisors without other deformity was present in three cases and microdentia in two. Unerupted teeth in the older children were found in four cases. Roentgenograms of these showed malposition of the teeth to account for their retention in the jaw.

ROENTGEN-RAY DEMONSTRATION OF UNERUPTED TEETH

In 1923, Stokes and Gardner [3] reported the case of a girl, aged 5, in which they demonstrated typical unerupted hutchinsonian teeth by

3. Stokes, J. H., and Gardner, B. S.: The Demonstration of Unerupted Hutchinsonian Teeth by the Roentgen Ray, J. A. M. A. **80**:28 (Jan. 6) 1923.

means of the roentgen ray. This being the only case reported in medical literature, I endeavored to corroborate their report and also to demonstrate the mulberry molar.

About one third of our children were of such an age that their incisors and molars of the second dentition were still unerupted. An effort was made to take roentgenograms of all these unerupted teeth. Some of the children were refractory, and pictures could not be obtained. However, fourteen roentgenograms of unerupted upper central incisors were taken. Two of these incisors proved to be hutchinsonian in type and could be readily diagnosed from the films. The distinctive elements —the wide separation, the convergence toward the biting edge, the The age incidence was between 5 weeks and 16 years, and the number crescentic notch and the barrel shape—are easily discernible in figure 6.

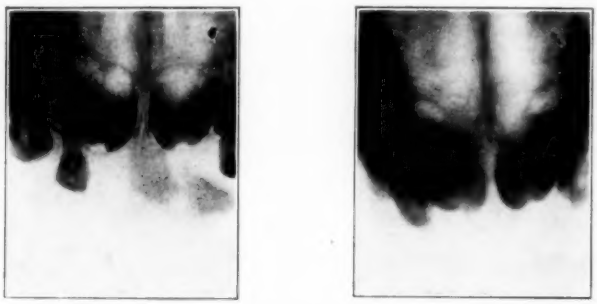

Fig. 6.—Roentgenographic appearances of unerupted hutchinsonian teeth.

Roentgenograms of thirteen children with unerupted first molars were likewise taken, with the hope that the mulberry deformity could be demonstrated. In none of these was the characteristic mulberry molar found. It is possible that all the children selected for this purpose had normal teeth; however, the roentgenologist expressed doubt as to the ability to bring out the distinctive characteristics on the roentgenograms even though the mulberry deformity existed. The angle at which the picture is taken and the inability of young children to cooperate make their demonstration difficult.

The results of this study furnish corroborative evidence to show that the hutchinsonian incisor can be demonstrated by the roentgen ray prior to eruption.

The demonstration of the mulberry molar, while not accomplished in this work, is still open to question.

Clinical Notes

MYCETOMA IN AN AMERICAN NEGRO

REPORT OF A CASE

C. R. Halloran, M.D., Los Angeles

Up to the present time, thirty cases of mycetoma have been reported in America, a very large percentage of which have been observed in immigrants. This disease is not infrequently found in Europe and is most common in India and in the tropics. Of the thirty cases of mycetoma reported in America, only one has thus far been of the melanoid variety; all others have been of the ochroid type. The melanoid case, reported by Wright,[1] was observed in an Italian woman who had lived for several years in this country.

I had the privilege of studying the case of mycetoma that I shall report, at the Brooklyn Hospital, through the courtesy of Dr. Nathan T. Beers.

William Randolph, an American negro, aged 56, presented himself at the skin clinic of the Brooklyn Hospital on Oct. 13, 1926, because of a condition of his left foot which had been present for four years. He was born in Thomasville, Ga., and had lived most of his life in Georgia, Florida and South Carolina. In 1923, while living in Florida, a pinhead sized pustule appeared on the dorsum of the left foot at the base of the third and fourth toes. The patient was at that time working in the fields, and frequently went barefooted. He picked the lesion with a pin and expressed pus. Within a few months, another lesion developed; within a year, the anterior third of the dorsum and sole of the foot were involved. During the past three years, the disease had progressed more slowly.

When the patient presented himself at the clinic, the left foot was markedly swollen, and numerous papules, pustules and vesicles were scattered over the dorsum and sole of the anterior half of the foot. The lesions varied in size from that of a pinhead to that of a split pea. Some of the lesions appeared to be crushed over, and a few of them were discharging a yellowish pus. Most of the lesions, however, appeared never to have ruptured. The sole bulged in the region of the metatarsophalangeal articulations, and the plantar lines were absent. The toes were elevated when the foot rested on the floor. The subinguinal lymph nodes on the left side were swollen to the size of a walnut; this condition had been present only for the last eight months before the patient was seen. He complained of little pain, but spoke of discomfort in walking and standing.

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1. Wright, J. H.: Tr. A. Am. Phys. **13**:471, 1905. Musgrave and Clegg: Philippine J. Sc. **11,** no. 6, sec. B, 1907. Crowell, B. C., in Nelson Looseleaf of Living Medicine, 1922, vol. 11, p. 374. Boyd and Crutchfield: Contribution to Study of Mycetoma, Am. J. Trop. Med. **215**:289, 1921. Cornwell, J. W., and Lafrenais, H. M.: Indian J. M. Research **10**:239, 1922. Kirkham, H. L. D.: Surg. Gynec. Obst. **33**:687, 1921. Montoro: Madura Foot in Cuba, J. A. M. A. **72**:817 (March 15) 1919. Chalmers: New Orleans M. & S. J. **18**:455, 1917. Blanc: Bull. Soc. Path. Exot. **10,** 1917. Pernet: Brit. J. Dermat., p. 265, 1905. Pepere: Sperimentale: Arch. di Biol. **68**:531, 1914.

From the discharging pus, pin point to pinhead sized melanoid granules were obtained, microscopic and cultural study of which demonstrated a streptothrix that resisted attempts at staining by Gram's method.

Histologic study of a section taken from a lesion on the foot for a biopsy showed a flattened epithelium without papillae, beneath which an inflammatory nodule was seen. In the center of the nodule was a mass of fungi surrounded by a dense infiltration of polymorphonuclears and red blood cells. There were numerous new blood vessels and epithelioid cells.

The involved subinguinal lymph nodes were removed, but microscopic study of a section and culture of them did not show anything of interest. The Wassermann test of the blood was negative.

1052 West Sixth Street.

News and Comment

NEW STEP IN INTERNATIONAL RELATIONS OF PHYSICIANS

Drs. Howard Morrow of San Francisco, Howard Fox of New York, J. B. Shelmire of Dallas, Texas, D. R. Smith of Toronto, Pardo Castello of Havana and Herman Goodman of New York have been added to the editorial cabinet of the *Acta Dermato-Venereologica*.

Abstracts from Current Literature

PREGNANCY AND NEUROSYPHILIS: RESULTS OF FIVE YEARS' STUDY OF HOSPITAL MATERIAL. G. H. BELOTE, J. A. M. A. **89**:268 (July 23) 1927.

Belote found that cerebrospinal invasion and involvement is about equally divided between men and women. In early syphilis, cerebrospinal invasion was much more frequent in women who had borne children than in nulliparas. In late syphilis, the percentage of neurosyphilitic incidence was practically the same in parous and nulliparous women. Pregnancy did not appear to be a factor in the prevention of neurosyphilis. The criterion of neurosyphilitic invasion was a positive Wassermann reaction with the spinal fluid.

COEXISTING ACTIVE SYPHILIS OF THE LARYNX WITH ACTIVE PULMONARY TUBERCULOSIS. D. L. ENGELSHER, J. A. M. A. **89**:284 (July 23) 1927.

The patient had active pulmonary lesions with tubercle bacilli in the sputum. He developed hoarseness and apparently tuberculous laryngitis, but because of a positive syphilitic history he was given neoarsphenamine. This treatment cleared up the laryngeal symptoms and caused decided improvement in his general health. The case is recorded as an instance of an unusual coexistence of the two diseases, and because of the diagnostic and prognostic questions involved.

TREATMENT OF ARSENICAL ECZEMA. BINFORD THRONE, LAIRD S. VAN DYCK, ELEANOR MARPLES, A. B. and C. N. MEYERS, New York State J. Med. **26**:970 (Dec. 1) 1926.

A description is given in this article of the types of eruption which, in the authors' belief, should cause suspicion of a probable arsenic causation, notably the acute papulovesicular type, and a rash resembling exfoliative dermatitis. A description of the technic of treatment follows—0.5 Gm. of sodium thiosulphate in freshly distilled water (quantity not stated) every third day, and 1 Gm. by mouth before breakfast in 4 ounces (118.4 cc.) of water, on the other days.

THE KAHN PRECIPITATION TEST FOR SYPHILIS IN COMPARISON WITH THE WASSERMANN RESULTS. RUDOLPH J. SHAFER, New York State J. Med. **27**:605 (June 1) 1927.

This paper consists of a short statement of the technic and of the results obtained by various workers, including the author, who concludes with the following summary: The Kahn test is a practical precipitation test. It is reliable when performed by a competent serologist. The majority of discrepancies between the Wassermann reaction and the Kahn test occur in the treated patients. The Kahn test is slightly more sensitive than the Wassermann test in patients who have been treated.

ARSENIC FINDINGS IN DERMATOLOGICAL CONDITIONS. BINFORD THRONE, L. S. VAN DYCK, ELEANOR MARPLES and C. N. MEYERS, New York State J. Med. **27**:757 (July 15) 1927.

This article is a review of diseases in which arsenic was found in the urine in pathologic amounts, and of the results of treatment. The diseases include eczema, scleroderma, leukoderma, psoriasis, Majocchi's disease, pemphigus,

motor ocular paralysis and pigmentation. Tables are given showing the excessive secretion of arsenic in certain cases of these diseases; many of the patients improved greatly after the use of sodium thiosulphate.

WILLIAMS, New York.

CONCERNING THE ECZEMATIFORM STREPTOCOCCIDES. R. SABOURAUD, Ann. de dermat. et syph. **8**:321 (June) 1927.

Sabouraud discusses a recent article by Haxthausen, which appeared in the *Annales* in April, 1927, and has been abstracted. Haxthausen suggested the use of a new culture method for detecting the presence of streptococci in cutaneous lesions. While agreeing that they can be found in this way, Sabouraud contends the true causative organisms can be found with certainty only by the examination of serial sections of the early lesions. It has been shown that streptococci can cause eczematiform eruptions.

THE TREATMENT OF KERION AND OF CERTAIN CASES OF TRICHOPHYTIC FOLLICULITIS BY INTRAVENOUS INJECTIONS OF LUGOL'S SOLUTION. PAUL RAVAUT, DUVAL and RABEAU, Ann. de dermat. et syph. **8**:327 (June) 1927.

The authors report sixteen cases, chiefly in adults, in which suppurating or simple inflammatory lesions were cured in from fifteen to thirty days, by injections of a dilute compound solution of iodine. The intravenous route is recommended as being most effective. Although the more actively inflammatory lesions were especially benefited, interesting results were also obtained in the erythematosquamous types.

DYSKERATOSIS. F. KOGOJ, Ann. de dermat. et syph. **8**:351 (June) 1927.

Kogoj outlines the German and French views on dyskeratosis and the group of dyskeratoses. He has found dyskeratosis in a wide variety of dermatoses, and agrees with Pautrier that it is too banal to be used in the establishment of a group. Apparently, it may occur in any acanthosis. According to the author, Bowen's disease and Paget's disease are not chiefly featured by dyskeratosis.

A CASE OF PORADENOLYMPHITIS. PAUL RAVAUT and JACQUES VIBERT, Bull. Soc. franç. de dermat. et syph. **34**:210. 1927.

A small penile erosion was accompanied by considerable enlargement of the inguinal and iliac lymph nodes of the corresponding side. There was a generalized slight enlargement of the lymph nodes, and the size of the spleen was increased. The temperature was slightly elevated. Possibilities of syphilis and chancroid were excluded by negative microscopic examinations, failure of auto-inoculation, negative intradermal reaction with chancroidal vaccine, and rapid, uneventful healing after a biopsy.

TWO CASES OF FOLLICULAR KERATOSIS, WITH OIL PAPULES IN ONE AND MELANOSIS IN THE OTHER. PAUL RAVAUT and JAQUES VIBERT, Bull. Soc. franç. de dermat. et syph. **34**:214, 1927.

Both patients worked in oil, and one had developed oil papules while the other presented a typical case of Riehl's melanosis.

COEXISTENCE OF TABES AND SECONDARY CUTANEOUS SYPHILIDS, WITH NEGATIVE SEROLOGIC REACTIONS. E. FRANCOIS-DAINVILLE and J. LANCON, Bull. Soc. franç. de dermat. et syph. **34**:216, 1927.

A man who had had malaria from 1917 to 1924 had contracted syphilis in 1918, in Africa. Treatment had been neglected, and in 1926 he presented an eruption and neurologic signs, while his wife was found to have mucous patches.

MIXED LEPRA: CUTANEOUS AND NERVOUS; NEGATIVE WASSERMANN REACTION. LOUSTE, DUCOURTIOUX and LOTTE, Bull. Soc. franç. de dermat. et syph. **34**:220, 1927.

In this typical case, contracted in Africa, the bacilli were found in the nose.

DRY GANGRENE DUE TO ARTERITIS OF THE DORSOLUMBAR REGION: ETIOLOGIC CONSIDERATIONS. LOUSTE, THIBAUT, ROBERT CAHEN and P. VANBOCKSTAEL, Bull. Soc. franç. de dermat. et syph. **34**:223, 1927.

A man, aged 73, had a condition of sudden onset which apparently was of syphilitic origin. Hyperglycemia was also present, and the age of the patient was another factor to be considered.

CHRONIC PRURIGO OF THE FACE IN A PATIENT AGED 15. LOUSTE, THIBAUT, ROBERT CAHEN and P. VANBOCKSTAEL, Bull. Soc. franç. de dermat. et syph. **34**:226, 1927.

The eruption had been present for twelve years in this unusual location.

TREATMENT OF CHRONIC ULCERS WITH RADIOACTIVE OINTMENT. E. DELMAS, Bull. Soc. franç. de dermat. et syph. **34**:229, 1927.

The ointment, containing radium bromide associated with uranium, was applied to sluggish ulcers of the leg in two cases, and to an ulcerative radiodermatitis in another, with good results.

A CASE OF GANGRENOUS ZOSTER OF THE GLANS PENIS. E. DELMAS, Bull. Soc. franç. de dermat. et syph. **34**:231, 1927.

Confluent vesicles produced a large mutilating chancriform ulceration of the glans. The glans penis was the only area involved, therefore the diagnosis was difficult.

WHITE FIBROUS CICATRICIAL NEVUS WITH ANGIOMATOUS BORDER. GOUGEROT, GEORGES KUSS and FILLIOL, Bull. Soc. franç. de dermat. et syph. **34**:233, 1927.

The nevus, 6 cm. long and 4 cm. wide, was located on the neck of a child, aged 6 years. There was no history of injury or of treatment.

DISCUSSION OF MALARIA THERAPY AS A PREVENTIVE OF NEUROSYPHILIS. H. GOUGEROT, Bull. Soc. franç. de dermat. et syph. **34**:234, 1927.

Gougerot describes a case in which the chancre appeared in 1916, and malaria in 1917, continuing for two years. Signs of neurosyphilis were first seen in 1918.

ZOSTER AND VARICELLA BY BIOTROPISM. LOTTE, Bull. Soc. franç. de dermat. et syph. **34**:237, 1927.

A child with pertussis had received injections of serum. Eleven days after the first injection, and following a mild serum reaction of two days' duration, zoster and varicella developed simultaneously. The patient had been exposed to varicella two months previously.

AXILLARY NEURODERMATITIS (FOX-FORDYCE). C. LAURENTIER, Bull. Soc. franç. de dermat. et syph. **34**:241, 1927.

A case with signs of endocrinous imbalance is reported in a woman, aged 22.

CONCERNING THE INTERDIGITAL LESIONS OF MYCOTIC ORIGIN. DUBREUILH, Bull. Soc. franç. de dermat. et syph. **34**:245, 1927.

According to Dubreuilh, the site of predilection is the space between the third and fourth fingers.

RHABDOMYOMA OF THE TONGUE IN A SYPHILITIC PATIENT WITH LINGUAL LEUKOPLAKIA. J. ROEDERER and A. DISS, Bull. Soc. franç. de dermat. et syph. **34**:247, 1927.

A small painful eroded nodule on the dorsum of the tongue, suggestive of epithelioma, was examined histologically and found to be a rhabdomyoma.

VAGABONDS' DISEASE AND GENERALIZED MELANODERMA (CONTRIBUTION TO THE STUDY OF THE MELANODERMAS). PAUTRIER, G. LEVY and SLOIMOVICI, Bull. Soc. franç. de dermat. et syph. **34**:249, 1927.

Asthenia and arterial hypotension were noted in this case, which is completely described, clinically and histologically. Melanin and numerous melanoblasts were found in sections from the buccal mucosa.

ADENOMA SEBACEUM OF THE PRINGLE TYPE. PAUTRIER, J. ROEDERER and G. LEVY, Bull. Soc. franç. de dermat. et syph. **34**:253, 1927.

In a man, aged 26, there were facial lesions of twenty-two years' duration. Histologic study revealed the presence of vascular ectasia and a local multiplication of melanoblasts, with a great increase in chromatophores. There were no adenomatous lesions.

LICHEN PLANUS CURED BY MEDULLARY RADIOTHERAPY; AN ACCOMPANYING RADIORESISTANT LICHEN CORNEUS HYPERTROPHICUS. G. HUFSCHMITT, Bull. Soc. franç. de dermat. et syph. **34**:254, 1927.

This result would seem to indicate that the two conditions are distinct and of different origin.

ACRODERMATITIS CHRONICA ATROPHICANS (PICK-HERXHEIMER) IN AN EARLY STAGE. PAUTRIER and ALBERT WEILL, Bull. Soc. franç. de dermat. et syph. **34**:256, 1927.

This condition is seen more frequently in central Europe and along the Rhine than in the interior of France. The patient, a man, aged 25, had had the condition on the left upper extremity for two years. Erythema and atrophy were present, but there were no visible superficial blood vessels. The thyroid gland was enlarged.

ACRODERMATITIS CHRONICA ATROPHICANS (PICK-HERXHEIMER). R. GLASSER and A. ULLMO, Bull, Soc. franç. de dermat. et syph. **34**:260, 1927.

A woman, aged 36, presented advanced involvement of the lower extremities, of four years' duration.

ACUTE ULCER OF THE VULVA. J. ROEDERER and A. SLOIMOVICI, Bull. Soc. franç. de dermat. et syph. **34**:263, 1927.

In a girl, aged 17, the ulceration was painful and of febrile onset. The bacteriologic and histologic observations are described.

RESULTS OF RADIOTHERAPY IN RECURRENT HERPES OF THE CHEEK IN A GIRL. J. ROEDERER, Bull. Soc. franç. de dermat. et syph. **34**:269, 1927.

The patient had had an outbreak of herpes every two or three months for two and one-half years. The vesicular contents produced keratitis in a rabbit. Following a single roentgen-ray exposure, the attacks ceased, but a fresh outbreak occurred one year later. Further roentgen-ray treatment was then given, and the result was awaited.

PAPULONECROTIC TUBERCULIDES OF THE UPPER AND LOWER EXTREMITIES AND ULCERATIVE TUBERCULIDES OF THE LEGS. PAUTRIER and ALICE ULLMO, Bull. Soc. franç. de dermat. et syph. **34**:270, 1927.

In a girl, aged 15, with pulmonary tuberculosis, there were ulcers of the legs which could not be classified as erythema induratum, but which were histologically of tuberculous structure. All of the lesions faded after a violent tuberculin reaction.

LATE RESULTS OF TREATMENT OF LICHEN PLANUS BY MEDULLARY RADIOTHERAPY. G. HUFSCHMITT, Bull. Soc. franç. de dermat, et syph. **34**:276, 1927.

A patient was given spinal roentgen-ray treatment for generalized lichen planus, and remained entirely free from the eruption for two and one-half years. At the end of that period the condition recurred on the upper extremities.

GRANULOSIS RUBRA NASI. A DUPONT, Bull. Soc. franç. de dermat. et syph. **34**:278, 1927.

Typical lesions of several months' duration in a child, aged 7 years, were accompanied by ulerythema ophryogenes. Under roentgenotherapy the nasal lesions faded.

MILIARY LUPOIDS AND TUBERCULIDS OF THE FACE. PAUTRIER and GLASSER, Bull. Soc. franç. de dermat. et syph. **34**:280, 1927.

The lesions were of three months' duration, in a man, aged 30. A guinea-pig inoculation produced tuberculosis.

SCLERODERMA IN A BAND ON THE FOREHEAD. J. ROEDERER, Bull. Soc. franç. de dermat. et syph. **34**:284, 1927.

The condition, of four years' duration, was accompanied by leukoderma.

MILD EXFOLIATIVE DERMATITIS AFTER THE INGESTION OF 0.5 GRAM OF TREPARSOL, FIVE YEARS AFTER A POST-ARSPHENAMIN ERYTHRODERMA; INTOLERANCE TO DIFFERENT ANTISYPHILITIC DRUGS. A. BOUTELIER, Bull. Soc. franç. de dermat. et syph. **34**:285, 1927.

In this case, bismuth and mercury were also not tolerated.

SYPHILITIC GUMMATOUS ULCERATIONS GROUPED IN THE INGUINAL REGION. PAUTRIER and ALICE ULLMO, Bull. Soc. franç. de dermat. et syph. **34**:289, 1927.

In a girl, aged 16, with an apparently congenital syphilitic infection, the inguinal lesions resembled ulcerating tuberculous lymph nodes. The histologic characteristics and the results of treatment verified the diagnosis of syphilis.

REMARKABLY INTENSE UNGUAL LESIONS OF THE HANDS AND FEET, IN THE COURSE OF ALOPECIA AREATA IN A TUBERCULOUS PATIENT. R. GLASSER and A. SLOIMOVICI, Bull. Soc. franç. de dermat. et syph. **34**:293, 1927.

Pronounced nail changes accompanied total alopecia. A photograph of the fingernails is included.

SCLERODERMA OF THE SCALP IN A BAND. GEORGES LEVY, Bull. Soc. franç. de dermat. et syph. **34**:297, 1927.

The patient was a boy, aged 15, with hyperthryoidism. A photograph of the lesion and a histologic report are included.

THREE CASES OF SYMMETRICAL SUBMALLEOLAR ERYTHROCYANOSIS. PAUTRIER and G. LEVY, Bull. Soc. franç. de dermat. et syph. **34**:300, 1927.

The condition occurred in three girls, aged from 17 to 20, of the so-called lymphatic habitus. One girl had had erythema induratum, and all had shown signs of tuberculosis as well as endocrine abnormalities. Clinically, there were erythematous plaques on a cyanotic background. The histologic observations are described.

THE DISCOVERY OF A DEEP NERVE LESION WITH A TUBERCULOID PERINEURAL INFILTRATION, IN A CASE OF ACRODERMATITIS CHRONICA ATROPHICANS (HERXHEIMER-PICK). PAUTRIER and A. DISS, Bull. Soc. franç. de dermat. et syph. **34**:309, 1927.

In a typical case of two years' duration, the nerve lesions were found in the lower portion of the derma. Further study of other cases is suggested.

GENERAL PARESIS AND MALARIA. A. SEZARY and A. BARBE, Bull. Soc. franç. de dermat. et syph. **34**:316, 1927.

Four cases are reported in which malaria, contracted before or after syphilis, failed to prevent general paralysis.

ERYTHROMELIE OF PICK, WITH LICHEN PLANUS OF THE TONGUE AND BUCCAL MUCOSA. ZIMMERN, GOUGEROT, L. HUET and F.-P. MERKLEN, Bull. Soc. franç. de dermat. et syph. **34**:318, 1927.

The two conditions coexisted in a man, aged 38.

PRURIGO CIRCINATE. GOUGEROT and F. P. MERKLEN, Bull. Soc. franç. de dermat. et syph. **34**:320, 1927.

In this case, many of the papules tended to extend peripherally to a diameter of from 20 to 25 mm., with central involution. Some of these circinate lesions became confluent. Their average duration was from fifteen to thirty days.

URTICARIA DUE TO COLD. GOUGEROT, PEVRE, MOUTET and BOURDILLON, Bull. Soc. franç. de dermat. et syph. **34**:321, 1927.

The shock was accompanied by a drop in the leukocyte count from 9,000 to 1,000, and by temporary changes in the red blood corpuscles. The patient had congenital syphilis.

SCLERODERMATOUS PLAQUE, MUCH IMPROVED BY COMBINED TREATMENT WITH ULTRAVIOLET RAYS AND IODIN IONIZATION. LOUSTE, JUSTER and DAVID, Bull. Soc. franç. de dermat. et syph. **34**:322, 1927.

A facial plaque of two years' duration responded well to three months of treatment.

TRIAL OF AUTODERMOTHERAPY BY ELECTROCOAGULATION: PRESENTATION OF TWO PATIENTS WITH PSORIASIS TREATED BY THIS METHOD. PAUL RAVAUT, Bull. Soc. franç. de dermat. et syph. **34**:323, 1927.

In certain cases of multiple verrucae, nodular lepra and tuberculosis cutis, and in Darier's case of nevocarcinoma, the destruction of one lesion by electrocoagulation, electrolysis or solid carbon dioxide was followed by a general improvement or cure. Treatment by the electrocoagulation of several lesions was used on a few occasions in the three cases of widespread psoriasis. In the first case, the eruption disappeared after two months of this treatment, in the second, it disappeared after two weeks, and in the third there was no improvement. In a case of leukemia cutis and in one of mycosis fungoides, the treatment was also used with apparent benefit. The mechanism of its action remains obscure.

A Bacillus of Cutaneous Gangrene. Milian and Delarue, Bull. Soc. franç. de dermat. et syph. **34**:328, 1927.

A patch of cutaneous gangrene was produced by the intradermal inoculation of a rabbit with the pure culture of a bacillus found in gangrenous lesions of dermatitis herpetiformis.

Submental Tuberculous Adenopathy; Secondary Ulcerative Vegetating Cutaneous Tuberculosis. Louste, Robert Cahen and P. Vanbockstael, Bull. Soc. franç. de dermat. et syph. **34**:329, 1927.

The cutaneous lesions developed about a discharging sinus.

Severe Local Disturbances, with Gangrenous Tendency, Due to the Intramuscular Injection of an Insoluble Bismuth Salt. Louste, Robert Cahen and P. Vanbockstael, Bull. Soc. franç. de dermat. et syph. **34**:330, 1927.

Local vascular obstruction was apparently causative in this case.

Gangrenous Penile Ulcerations: Discussion of Diagnosis and Pathogenesis. Louste, Robert Cahen and P. Vanbockstael, Bull. Soc. franç. de dermat. et syph. **34**:332, 1927.

The ulcerations were indolent and of six months' duration, and no definite clinical diagnosis could be made. Bacteriologic studies gave negative results, but a typical chancroidal lesion was produced by auto-inoculation.

Symmetrical Eruption Due to Local Use of Antipyrin in a Patient with Hyperidrosis. Lortat-Jacob and Legrain, Bull. Soc. franç. de dermat. et syph. **34**:336, 1927.

Scattered erythematous and pigmented plaques appeared within forty-eight hours after an ointment containing antipyrin had been applied to combat dyshidrosis of the palms and soles. None of the drug had been ingested. Such cases have been reported before.

Researches on the Etiology and Treatment of Pigmentary Facial Erythrosis (the Peribuccal Pigmentary Erythrosis of Brocq). E. Juster, Bull. Soc. franç. de dermat. et syph. **34**:337, 1927.

These brownish areas, on the lower portion of the face, occur chiefly in women. Juster considers them seborrheic, and dependent on digestive or endocrinous disturbances.

Tumor of the Face (Histologic Sections). Chatellier, Bull. Soc. franç. de dermat. et syph. **34**:340, 1927.

This histologic report describes a large round cell sarcoma in which the tumor cells had undergone hyalin degeneration, forming Russell's bodies.

Condylomatous Lupus of the Tongue. Chatellier and Rigaud, Bull. Soc. franç. de dermat. et syph. **34**:341, 1927.

The lesions closely resembled hypertrophic papules of syphilis, but were histologically tuberculous.

Secondary Actinomycosis of the Abdominal Wall. Paul Vigne and A. W. Lauzun, Bull. Soc. franç. de dermat. et syph. **34**:343, 1927.

In a man, aged 41, the cecum and appendix were first infected, and later the skin. The cutaneous involvement was widespread.

Simple Method of Testing for Syphilis, Based on the Reducing Power of Serums. P. Gastou and P. Lemay, Bull. Soc. franç. de dermat. et syph. **34**:346, 1927.

A technic is described whereby the blood serum is combined with physiologic salt solution containing aniline, and with the tincture of cochineal, a 1 per cent solution of potassium ferricyanide being added after fifteen minutes. The reducing power is said to be considerably increased in syphilitic serums. While this apparently cannot replace the Wassermann reaction, the results are parallel to it in all stages of syphilis, and the test may be helpful to practitioners without laboratory facilities.

Pyrocatechin Intravenously and Desensitization to Light. H. Jausion and A. Pecker, Bull. Soc. franç. de dermat. et syph. **34**:350, 1927.

Acriflavine, used in the treatment of gonorrhea, has been found to produce photosensitization of the skin. This effect was avoided by combining pyrocatechin with the solution injected. Resorcinol, administered by mouth, had been found effective, but it produced intestinal disturbances.

Unusual Form of Buccal Tuberculosis. Jeanselme, Paul Lefevre and Willemin. Bull. Soc. franç. de dermat. et syph. **34**:353, 1927.

The indolence, extensive firm infiltration and type of ulceration of the lesion suggested epithelioma, but the histologic picture was that of tuberculosis.

Lichen Planus and Superficial Radiotherapy (New Facts). Gouin and Bienvenue, Bull. Soc. franç. de dermat. et syph. **34**:356, 1927.

The authors' technic for superficial roentgen-ray exposure of the spinal region is given briefly, and cases are described to illustrate the effectiveness of this treatment.

Transformation of Certain Cutaneous Reactions into Lichen Planus, with or Without Radiotherapy; Buccal Lichen Planus with a Cutaneous Eruption (Cutaneous Reaction) with or Without Radiotherapy. Gouin and Bienvenue, Bull. Soc. franç. de dermat. et syph. **34**:361, 1927.

In an untreated case of generalized pruritic parapsoriasis of the guttate type, and following radicular roentgen-ray treatment in one of erythema multiforme, lichen planus developed. In a case of buccal lichen planus a transient prurigo-like eruption appeared several times, at intervals of five or six days. Following radicular radiotherapy, cutaneous lichen planus lesions appeared in this case, and the oral lesions faded.

Cure of Three Cases of Lichen Planus by Treparsol. G. Hufschmidt, Bull. Soc. franç. de dermat. et syph. **34**:365, 1927.

Good results were secured with this drug containing pentavalent arsenic. However, Hufschmidt feels that more rapid improvement may be secured with spinal radiotherapy.

On the Wassermann Reaction in Lupus Erythematosus, Carried Out with Large Amounts of Serum. Jorgen Schaumann and Karl Heden, Bull. Soc. franç. de dermat. et syph. **34**:366, 1927.

According to the authors, the reaction with large quantities of serum is positive in a relatively large number of cases of lupus erythematosus. The significance of this positivity remains obscure.

REMARKABLE ACTION OF BISMUTH IN TWO CASES OF LUPUS ERYTHEMATOSUS. A. SEZARY and F. BENOIST, Bull. Soc. franç. de dermat. et syph. **34**:382, 1927.

A case of lupus erythematous, of five months' duration, cleared up after six weeks of treatment with bismuth, comprising twelve injections. A second patient, whose condition was of four months' standing, was greatly improved after ten injections.

PROBABLE LICHEN PLANUS ATROPHICUS OF ZOSTERIFORM DISTRIBUTION IN A CHILD AGED 3 YEARS. HUDELO, CAILLIAU and MORNET, Bull. Soc. franç. de dermat. et syph. **34**:385, 1927.

The eruption, of eleven months' duration, involved the right side extending from the buttocks to the toes, and was not absolutely typical of lichen planus atrophicus. The histologic observations are described.

GLOSSITIS WITH LEUKOPLASTIC PATCHES, AND FACIAL DERMATITIS OF BACTERIAL ORIGIN, MORBID PARALLELISM. HUDELO, MORNET and CAILLIAU, Bull. Soc. franç. de dermat. et syph. **34**:387, 1927.

The clinical pictures of the condition which occurred in two brothers with congenital syphilis, were strikingly similar, and stigmas of syphilis were present. The lingual patches were possibly due to a local infection, and may not have been true leukoplakia.

HYPERKERATOTIC PSORIASIS WITH PAPILLOMATOSIS AND CUTANEOUS HORNS; LINGUAL LESIONS OF UNDETERMINED NATURE. HUDELO, GARNIER and CAILLIAU, Bull. Soc. franç. de dermat. et syph. **34**:389, 1927.

The psoriasis was of twenty-five years' duration, in a woman, aged 37. The histologic observations in the cutaneous and lingual lesions are described.

EDEMATOUS VESICULAR ERYTHRODERMA CURED BY THE EXCISION OF INTRAGLUTEAL NODULES OF BISMUTH. MILIAN and LENORMAND, Bull. Soc. franç. de dermat. et syph. **34**:395, 1927.

Nodules of bismuth were excised from both buttocks, and the erythroderma, which had been present for eight months, promptly faded.

VULVAR ELEPHANTIASIS. MILIAN and DELARUE, Bull. Soc. franç. de dermat. et syph. **34**:396, 1927.

The right labium majus in this case was as large as a coconut. An inflamed right inguinal lymph node had been excised two years previously.

TUBERCULOUS CHANCRE IN A NURSING INFANT. MILIAN and L. DELARUE, Bull Soc. franç. de dermat. et syph. **34**:398, 1927.

There was a pea-sized brownish scaling patch on one ear, and the preauricular lymph node was enlarged. Animal inoculation verified the diagnosis. The mode of infection was not determined. The subject is briefly reviewed.

LEUKOPLAKIA AND ASSOCIATED MELANOTIC PATCHES OF THE BUCCAL MUCOSA. MILIAN and LENORMAND, Bull. Soc. franç. de dermat. et syph. **34**:401, 1927.

In an Algerian, aged 35, infected with syphilis, the etiology of the melanosis was obscure, as he did not have any definite endocrinous abnormalities.

LARGE ANGIOMA AND TUMOR OF THE ARM IN A NEW-BORN INFANT. LOTTE, Bull. Soc. franç. de dermat. et syph. **34**:402, 1927.

An orange-sized hemangioma partially encircled the arm.

HEMORRHAGES OF UTERINE MUCOSA AND PITUITARY GLAND FOLLOWING INJECTIONS OF NEOARSPHENAMINE. LOUSTE, ROBERT CAHEN and P. VANBOCKSTAËL, Bull. Soc. franç. de dermat. et syph. **34**:404, 1927.

Recurrent hemorrhages followed three injections of a small dose of neoarsphenamine. The clotting time of the blood was thirty-five minutes. The patient was a woman with secondary syphilis, the lymphatic system being especially involved.

CHRONIC PURPURA SIMPLEX OF THE LOWER EXTREMITIES. LOUSTE, CAILLIAU, ROBERT CAHEN and P. VANBOCKSTAËL, Bull. Soc. franç. de dermat. et syph. **34**:407, 1927.

In a girl, aged 18, the involvement was symmetrical and of over one year's duration. Other hemorrhagic manifestations did not occur. The etiology was obscure.

LUPUS VULGARIS OF THE LEFT UPPER EYELID AND BROW. LOUSTE, DUPUY-DUTEMPS and THIBAUT, Bull. Soc. franç. de dermat. et syph. **34**:410, 1927.

The patient was treated successfully by excision and graft. Recurrence had not occurred after one year, and the functional result was good, as shown by a photograph.

CENTRIFUGAL ANNULAR ERYTHEMA. JEANSELME and BURNIER, Bull. Soc. franç. de dermat. et syph. **34**:413, 1927.

The authors describe a case in a boy, aged 14, with generalized involvement of one year's duration. Photographs are included. The etiology was obscure. The literature on the subject is briefly reviewed. Lipschutz first described the condition and called it erythema chronicum migrans. In some cases bites from insects appear to be causative.

LICHEN NITIDUS. BURNIER and REJSEK, Bull. Soc. franç. de dermat. et syph. **34**:417, 1927.

The lesions were plentiful on the penis, less numerous on the forearms and grouped in sparse patches on one flank in a man, aged 24. Photographs and a photomicrograph are included. The histology was suggestive of a tuberculid.

SEVERE ERYTHRODERMA FOLLOWING A SINGLE INJECTION OF THE IODOBISMUTHATE OF QUININE. A. SEZARY and F. BENOIST, Bull. Soc. franç. de dermat. et syph. **34**:419, 1927.

The patient was a woman, aged 74, who had received neoarsphenamine uneventfully four years previously.

LOCAL HERXHEIMER REACTION IN A CASE OF VITILIGO. KITCHEVATZ, Bull. Soc. franç. de dermat. et syph. **34**:420, 1927.

The vitiligo, involving the neck, was of two months' duration in a man, aged 20, who did not present definite signs of syphilis. After an injection of 0.15 Gm. of neoarsphenamine, and again after 0.3 Gm., the patches became erythematous.

TREATMENT OF PITYRIASIS VERSICOLOR BY RUBS. C. AUDRY, Bull. Soc. franç. de dermat. et syph. **34**:426, 1927.

The author has employed the usual antiscabetic treatment in these cases with good results.

PARKHURST, Toledo, Ohio.

A Method of Measuring Roentgen Rays, Particularly in Skin Therapy. E. Bjorling, Acta radiol. **5**:267 (June) 1926.

The author describes two photographic methods, one for measuring the quality of and the other for measuring the intensity of roentgen rays.

The Energy Radiated as Roentgen Rays from a Coolidge Tube. T. E. Auren, Acta radiol. **6**:105, 1926.

These experiments were conducted at the Nobel Institute for Physical Chemistry, Stockholm. For all practical considerations, it may be assumed that the intensity of the roentgen rays varies directly with the square of the voltage. Filters of variable thicknesses of aluminum were employed.

The Radiosensitivity of Neoplastic Cells. A. Béclère, Acta radiol. **6**:141, 1926.

The radiosensitivity of acquired neoplasms, as a group, varies with the type of the cell from which the growth arises, while the sensitivity of individual cells at a given time varies with the state of cellular activity and vitality at the time of exposure. Cells of lessened activity are affected most by fractional dosage over a period of time. The increased resistance of neoplasms following radiation is said to be due to the destruction of the most radiosensitive cells, the most radioresistant cells remaining. Neoplasms of embryonic origin vary little from normal tissue in radiosensitiveness.

Treatment of Superficial Epitheliomas of the Skin by the Mixed Method. J. Belot, Acta radiol. **6**:147, 1926.

The method of treatment referred to has been employed by Brocq and Belot for more than twenty years in 6,000 cases. Thorough curettage is performed under local anesthesia, following which the site is irradiated with a roentgen-ray dosage of from 20 to 25 Holzknecht units usually filtered through from 5 to 10 mm. of aluminum. Aseptic dressings are applied, and after three weeks a second and usually final roentgen-ray treatment of from 6 to 12 Holzknecht units is employed, with the same filtration. The cases, comprising 85 per cent basal cell, 10 per cent squamous cell and 5 per cent mixed cell epitheliomas, showed from 80 to 85 per cent permanent cures.

Problems of the Biologic Action of Irradiation. Caspari and Dessauer. Acta radiol. **6**:241, 1926.

The author makes a detailed exposition of two hypotheses concerning the action of roentgen rays and radium rays on tissue.

The "point-heat" hypothesis is a physical one based on the reaction resulting from the contact of radiation energy with the electrons of irradiated tissue. The "necrohormone" hypothesis is a biologic one based on the action of hormones tolerated by the destruction of cells through irradiation. These hypotheses are not antagonistic and may explain certain phenomenon attending irradiation.

Roentgenotherapy with Very Small Doses. W. E. Chamberlain, Acta radiol. **6**:271, 1926.

Weekly doses of 5 or 10 per cent of a proved erythema dose were given to patients with certain types of skin infections and adenopathies, including Hodgkin's disease, leukemia, and glandular tuberculosis, a filter varying from 3 mm. aluminum to 0.25 mm. copper being employed. Good results were obtained, and no evidences of injury to the skin were observed in patients who were treated for one, two and three years and who received a total of from forty-five to eighty-two doses. This report was from the Stanford University School of Medicine, San Francisco.

ROENTGENOLOGY IN NORTH AMERICA. A. C. CHRISTIE, Acta radiol. **6**:281, 1926.

The author gives an interesting historical sketch dealing with the development of roentgenography.

ROENTGENOTHERAPY IN THE TREATMENT OF ACTINOMYCOSIS. T. EIKEN, Acta radiol. **6**:391, 1926.

Good results are reported following the use of heavy doses of filtered roentgen rays in conjunction with other approved therapeutic measures. Seven cases are cited.

RADIATION OSTEITIS. JAMES EWING, Acta radiol. **6**:399, 1926.

Heavy radiation with roentgen rays or radium devitalizes bone, favors development of brittle bone susceptible to fracture and predisposes to secondary infection. For these reasons, such treatment is contraindicated, particularly for carcinoma involving the alveolar or maxillary bones. In the treatment of patients for malignant diseases of the bone, restraint of growth instead of destruction of disease should be the aim. The fractional method of small doses over long periods should be employed.

A BIOLOGIC UNIT OF RADIATION. G. FAILLA, Acta radiol. **6**:413, 1926.

The susceptibility ratio of tissue reaction to different qualities and quantities of radiation is the most important factor in the determination of dosage, and this is not a constant factor. The most accurate fractional method of dosage measurement is that based on ionization.

CONTRIBUTIONS TO THE INVESTIGATION OF CANCER AFTER ROENTGEN-RAY TREATMENT IN VITRO. CARL KREBS, Acta radiol. **7**:91, 1926.

The development of transplants from squamous cell epithelioma in mice was not prevented by irradiation in vitro with dosages that were approximately the same as those employed in therapy.

CANCER PROPAGANDA. LAZARUS-BARLOW, Acta radiol. **7**:142, 1926.

The hopeful outlook should be stressed, induction of cancerphobia avoided, due recognition should be given to radiologic methods of treatment, and the medical practitioner should be properly instructed when a campaign against cancer is undertaken.

ROENTGEN-RAY TREATMENT OF ECZEMA. LUDWIG MOBERG, Acta radiol. **7**:201, 1926.

The action of the roentgen ray in chronic eczema is considered twofold, comprising a depressor action that inhibits the reaction of tissue to irritative stimuli and an eliminative action that removes or diminishes the pathologic alterations that have arisen through irritation. Roentgen-ray treatment is considered a local remedy and not a cure for eczema, and its value is thought to be overrated, especially by roentgenologists. The employment of roentgen-ray therapy, especially in chronic recurrent eczema, is not without risk. A justifiable postulate for the employment of roentgen rays in the treatment of eczema is one that restricts its use to those cases in which considerable advantage is to be gained by the employment of this method.

The author advocates the use of other local remedies, as indicated in each special case, conjointly with the roentgen ray, and has not observed ill effects from such treatment properly adopted.

PHOTOTHERAPY FOR RADIUM AND ROENTGEN-RAY INJURIES OF THE SKIN. AXEL REYN, Acta radiol. **7**:322, 1926.

A discussion and classification of roentgen-ray and radium injuries is given with a report of the cases of twenty-one patients treated with the carbon

arc lamp at the Finsen Institute. The technic is outlined. The treatment requires time and infinite patience, but the results are good. The ulcers are healed, the scars become soft and pliable and more resistant to trauma, and the danger of degenerative changes is reduced. The results with the carbon arc lamp are better than those obtained with the mercury lamp which does not always have a beneficial action.

EXPERIMENTS ON THE QUESTION OF ROENTGEN-RAY ALLERGY. SCHINZ and SLOTOPOLSKY, Acta radiol. **7**:365, 1926.

These experiments were conducted on the Sertoli cells of testicles of rabbits and indicated that fractional doses were more effective than single doses. The effect on the Sertoli cells following fractional dosage indicated more than a simple cumulative action. It was assumed that frequent irradiation resulted in a sensitization or roentgen-ray anaphylaxis of these cells, thus enchancing the effect of subsequent irradiations.

METHODS AND RESULTS IN THE TREATMENT OF CANCER. B. F. SCHREINER, Acta radiol. **7**:419, 1926.

The author reviews statistically the cases of 3,246 patients treated at the State Institute for the Study of Malignant Disease at Buffalo between 1914 and 1925. Four hundred and twenty-five basal cell epitheliomas showed 95 per cent of primary healing, and 75 per cent remained healed for from one to six years following erythema doses of unfiltered roentgen rays. Radium was used in a number of cases and electrocoagulation in a few. Prickle cell epitheliomas were divided into papillomatous and infiltrating types; the patients with the former type were treated with unfiltered roentgen rays and those with the latter by implantation with radium emanation. Patients who had metastatic lesions of the lymph gland were treated with radium packs and implantations and with filtered roentgen rays. Epitheliomas of the lip were divided into three clinical groups, according to the stage of advancement, with 78 per cent healing over a three year period and 52 per cent healing over a five year period in 109 cases without involvement of the lymphatic glands. Of sixty patients with metastases considered surgically operable, 39 per cent were well for three years and 30 per cent for five years; forty-seven with advanced cases failed to respond favorably. In 375 cases of carcinoma of the buccal cavity, healing was attained in from 6 to 50 per cent, depending on the site of the lesion and on the presence or absence of metastases.

CONCERNING THE LATENT PERIOD. G. SCHWARZ, Acta radiol. **7**:453, 1926.

The author discusses the latent period between the time of radiation and the appearance of biologic reactions. Reactions are considered to follow the production of endocellular actinoproteins and the liberation of inflammatory substances following cellular disintegration.

THE SKIN ERYTHEMA ROENTGEN-RAY DOSE BASED ON THE "R" UNIT. Acta radiol. **7**:461, 1926.

Experiments made with an ionization chamber, showed a wide variation in the readings obtained in different Swedish hospitals. The following averages were determined: 700R for copper and zinc, 600R for from 3 to 5 mm. of aluminum and 400R for 1 and 2 mm. aluminum.

TREATMENT OF INTRA-ORAL CANCER WITH RADIUM EMANATION. FRANK E. SIMPSON, Acta radiol. **7**:491, 1926.

The writer considers radium emanation, injected into the tumor and also applied to its surface, superior to cautery, diathermy, caustics and the roentgen rays. Large doses employed for short periods of time are preferred, approxi-

mately 1,000 millicuries. Metastatic lymph nodes are treated by surface irradiation and implantation of radium emanation seeds. The results in 115 cases are tabulated.

THE IDIOSYNCRASIES OF RADIATION WITH REFERENCE TO IRREGULAR AND DELAYED REACTIONS. A. SOILAND, Acta radiol. **7**:523, 1926.

The writer believes that some patients possess an idiosyncrasy to radiation, reacting early by erythematous and vesicular reactions and late by fibrosis and necrosis to doses of roentgen rays that are considered within the limits of safety for the average patient.

H. R. FOERSTER, Milwaukee.

DERMATOLOGIC ABSTRACTS

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

RISK OF LIQUID PARAFFIN IN CHRONIC CONSTIPATION. R. GIBSON, Brit. M. J. **1**:876 (May 14) 1927.

Gibson calls attention to eczema ani which may result from the ingestion of liquid petrolatum for constipation.

ECZEMA IN TOMATO PEELERS. G. FOÀ, Policlinico **34**:675 (May 9) 1927.

Foà observed eczema of the hands in children and young women employed in factories canning tomatoes. He attributes the eczema to the citric acid and succeeded in preventing it by advising the workers to dip their hands from time to time in a vat containing a 1 per cent solution of sodium hydroxide and then in water.

BISMUTH TREATMENT OF PSORIASIS. F. CATAPANO, Riforma med. **43**:380 (April 18) 1927.

Catapano reports good results in treatment of psoriasis with injections of a bismuth preparation.

SUBUNGUAL TUMORS. I. CARSTENSEN, Arch. f. klin. Chir. **144**:409 (March 3) 1927.

Carstensen reviews the literature on subungual tumors and reports one of Rodelius's cases. A woman, aged 27, had suffered for twelve years with pains in the tip of the right index finger. There was a small red point under the nail, which gradually became larger. For the last two years the slightest touch was enough to elicit extreme pain. On examination a bluish-red spot, the size of a lentil, was seen under the nail. When pressure was made on the free margin of the nail, the outline of blood vessels appeared over this spot. Subungual angioma was diagnosed. A roentgenogram, lateral exposure, showed an indentation in the bone of the terminal phalanx, corresponding to the bluish-red spot under the nail. The nail was removed. A round tumor, the size of a pea, was found and was enucleated without trouble. The periosteum of the bony cavity into which the tumor fitted was intact. Nine months later, the nail had regrown and was entirely normal. The histologic specimens are described in detail. The tumor cells were large, varied in shape and resembled epithelial cells. They were situated directly on the vascular endothelium. The growth resembled in structure three subungual tumors reported in the literature as angiosarcomas. The author regards these tumors as endothelioma or perithelioma. She gives the tumor in Rodelius's case the designation of endothelioma perivasculare. The diagnosis may be made from the localized pain alone, changes in the nail being absent. It is more difficult when, on the other hand, it must be made from the changes in the nail, without pain.

VARICOSE ULCER OF THE LEG. LIPPMANN, Deutsche med. Wchnschr. **53**:839 (May 13) 1927.

Lippmann calls attention to the old method of treatment by application of a 2 to 7 per cent solution of chlorinated lime. The gauze soaked in the solution should not be larger than the ulcer. The dressing is covered with a water-proof paper and changed twice daily.

FATAL CASE OF BISMUTH POISONING. J. MUNCK, Dermat. Wchnschr. **84**:367 (March 12) 1927.

A man, aged 45, received 5.13 Gm. of bismuth within eleven months. The urine was frequently examined for albumin, always with negative results. Symptoms of poisoning began with icterus and stomatitis. Later the temperature became subnormal, and delirium set in. Twelve days after the onset of symptoms the patient died. Phenomena pointing especially to poisoning with the salts of a heavy metal were stomatitis with ulcerations and a dark line at the margin of the gums, nephrosis with oliguria, cylindruria and albuminuria, colitis with marked infiltration of leukocytes, fatty degeneration of the liver and of the heart muscle and emaciation. Large quantities of bismuth were found in the internal organs, particularly in the organs of excretion.

FEVER TREATMENT OF EXPERIMENTAL SYPHILIS. R. WAGNER and F. BRIENL, Klin. Wchnschr. **6**:805 (April 23) 1927.

Wagner and Breinl infected rabbits with syphilis. Experimental infection of these animals with Rocky Mountain spotted fever caused a rise in temperature to from 40 to 41 C., lasting for one week, and exerted a curative influence on the syphilitic infection.

DOSAGE OF QUARTZ LAMP TREATMENT OF ERYSIPELAS. J. BECKER, München. med. Wchnschr. **74**:497 (March 25) 1927.

Becker recommends 1.5 erythema doses of ultraviolet rays in treatment of erysipelas. The irradiated area should extend about 4 cm. beyond the erysipelatous area in all directions.

SKIN DISEASES FROM INSUFFICIENT MENSTRUATION. B. ASCHNER, Wien. klin. Wchnschr. **40**:545 (April 28) 1927.

Klopstock regards the theory of antibodies induced by a combination of organ lipoids with the proteins of spirochetes as superfluous. He obtained rapid and striking production of Wassermann reagins by injecting killed spirochetes. Alcoholic extracts of spirochetes are a good antigen for the reaction, but are not sufficient to induce formation of antibodies.

TAR CARCINOMAS IN RABBITS. C. BONNE, Nederl. Tijdschr. v. Geneesk. **70**:1318 (March 12) 1927.

Two rabbits were each given thirteen treatments with tar on the skin of the back. In one a skin carcinoma developed, which metastasized in the lymph glands of the same side. In the other there developed an ulcerating papilloma, which was excised and on microscopic examination presented evidences of early carcinomatous degeneration. Three months later nothing abnormal was to be found in the animal. A rabbit was then treated with tar in and around the mouth, with the object of studying the effects of tar on the intestinal canal. Forty treatments were given, two a week from December to May. In June, a number of papillomas and an ulcer developed in the skin of the sacral region. Biopsy showed the ulcer to be a beginning carcinoma. Seven weeks later there were metastases in the groin. In the same animal pieces of the tumor were inserted under the skin in the neck, in the inner side of one ear and in the outer side of the other ear. Pieces

of one of these grafts were inserted under the skin on the inner surface of both ears in eight rabbits that had never been tarred. In one of these animals a tumor, histologically carcinoma, developed in each ear on the site of the graft—further attempts at grafting were unsuccessful. The tarred rabbit died about five months after the appearance of the first lesions. The gross and microscopic appearance of the lesions in this animal is described in detail.

CHANGES IN SKIN AND ORGANS IN WHITE MICE AFTER PAINTING WITH TAR. G. GULDBERG, Norsk. Mag. f. Laegevidensk. **88**:425 (June) 1927.

The epithelial tumors that Guldberg produced in white mice by painting with tar presented a continuous series of development from papillomas with incipient infiltrating growth to fully developed carcinomas. The type of tumor appeared to depend on the duration of the painting and on the length of time that the animals survived. These growths infiltrate the skin and subcutaneous tissues and involve the blood vessels and nerves. In twenty-five mice there developed altogether one papilloma, three incipient carcinomas and seventeen fully developed carcinomas, six of which metastasized in the lymphatic glands and lungs. The fully developed carcinomas were highly heterogenic, four of them Guldberg designates as irregular carcinomas, since they were constructed of spindle-shaped cells which he regards as epithelial cells. The remaining fully developed carcinomas were all pure squamous epithelial carcinomas consisting partly of highly differentiated epithelium with abundant development of cancroid pearls, partly of slightly differentiated or entirely undifferentiated cells. In most of the pure squamous epithelial carcinomas of this series, however, there was a mixture of both differentiated and undifferentiated cell forms in varying proportions. In addition to a local effect, the painting with tar produced a general toxic effect with changes in the internal organs. In the spleen both myelogenous changes and amyloid degeneration were present. The myelogenous changes began to develop in the course of the first three or four weeks and were present in a marked degree after seventy-four days' painting with tar. Amyloid degeneration was not seen with certainty until after two hundred and fifty days. In the liver there was considerable epithelial degeneration with abundant intracellular deposit of blood pigment as well as numerous lymph and leukocyte infiltrations. In all animals that lived more than one hundred days, chronic interstitial nephritis was found. In most of the animals there was bronchitis, sometimes bronchopneumonia. In all the organs examined, particles of tar were found deposited in intercanalicular and intracellular spaces.

VARIATIONS IN SURFACE TENSION OF THE URINE IN SKIN DISEASES. J. BAZILEVICH and POPOL, Klinicheskaya Meditsina **5**:253 (Feb.) 1927.

The surface tension of the urine was examined by Bazilevich and Popel in 103 patients with various skin diseases. It was altered in 22.3 per cent of the cases. In persons with psoriasis vulgaris, lupus vulgaris or urticaria, it was decreased. In lupus vulgaris, the changes in the tension are secondary, while in urticaria, they may be primary, testifying to considerable disturbances in the hepatic functioning. The facts may throw light on the etiology of many skin lesions, the cause of which is yet uncertain.

Society Transactions

AMERICAN DERMATOLOGICAL ASSOCIATION

Clinical Meeting, Fiftieth Annual Session, April 30, 1927

GEORGE MILLER MACKEE, M.D., *Presiding*

A CASE FOR DIAGNOSIS. Presented by DR. STOKES.

A woman, aged 24, single, had an eruption of three years' duration which had been treated as psoriasis. The elementary lesion was apparently a miliary pustule (follicular?), with peripheral extension to a pansy-shaped lesion, peripherally bullous or vesicopustular, with a hard, dry central crust. Healing usually occurred without but sometimes with slight scarring. The eruption had been limited to the flanks, back and axillae, but recently it had appeared on the abdomen. The patient also had epidermophytosis of the toes, with a questionable involvement of the anal cleft and axillae.

The Kolmer reaction on the blood had been repeatedly negative; the results of the Kahn test was O11 on two occasions. Bacteriologically, *Staphylococcus citreus* was found.

The eruption had responded temporarily to roentgenotherapy ($10 \div 5$ treatments, the last of ¼ HSD each). It had cleared once under treatment with vaccine of *Staphylococcus citreus* and 5 per cent gentian violet in 25 per cent alcohol. The present relapse had followed this treatment. Crude coal tar, ammoniated mercury ointment, ultraviolet radiation, colloidal manganese and bismuth formic iodide powder had proved ineffectual.

Biopsy showed a pustular dermatitis without excess of eosinophils.

DISCUSSION

DR. PUSEY: It seems to me that it is a case of impetigo-like eruption. I can make nothing more than that out of it. As I understand it, the peculiarity of the case is the formation of rather sharply defined areas on the trunk that began as a group of nodules which formed scabs and disappeared.

DR. WILLIAMS: I am reminded of a case I presented at the New York Dermatological Society a year or so ago. There was the same history of small, pustular lesions, which on inspection looked like impetigo, and which offered the same resistance to all forms of treatment. The man improved on treatment with white precipitate ointment and other local antiseptics, and also on light therapy, but there was always a recurrence. No definite conclusion was made after several exhibitions.

DR. TOWLE: I would suggest a diagnosis of dermatitis herpetiformis, because of the long duration, the itching, the recurrence and the vesicopustular eruption.

DR. STOKES: Dr. Otto H. Foerster suggested the possibility that the eruption was impetigo herpetiformis. These cases are occasionally seen in conditions other than pregnancy. I showed the patient with the feeling that she has an anomalous and extraordinarily resistant type of impetigo. The distribution seems to suggest that there is something about the nutritional background in that particular part of the body which favors this infection, for it never seems to leave this particular site. The organism which has been recovered may

have been an accidental observation, although it was obtained from a typical pustule in pure culture. The patient has had all sorts of treatment, and only two kinds, neither of which can be kept up indefinitely, have afforded even temporary relief.

A Case for Diagnosis. Presented by Dr. Ketron.

A white woman, married, aged 38, had a disorder of the legs of thirteen years' duration. The lesions began as sore spots on the skin, which assumed a pinkish color and later often a whitish central area. These patches were sometimes followed by ulceration, and when this occurred, it usually required from four to six months for the lesions to heal. She complained a great deal of pain in her legs, and her feet were often cold and blue. She had been under treatment for a long time for "stomach trouble." Over the lower portions of the legs, ankles and feet were numerous scars, varying in size from that of a pea to that of a half dollar, some depressed and deeply pigmented, others whitish. The skin between the scars showed a few opaque, whitish areas, about the size of a finger-nail, usually irregular and presenting dilated capillaries on the surface. Some of these lesions were surrounded by a hyperemic zone. The affected areas were soft, slightly raised or depressed, and occasionally painful to pressure. There was one irregular, superficial ulcer which started four months previously and was slowly decreasing in size.

The general physical examination showed nothing important. The blood Wassermann reaction was negative; the blood pressure was 110 systolic and 65 diastolic. There were no marked circulatory disturbances. Biopsy showed marked atrophy of the epidermis. In the corium there was necrosis of most of the blood vessels, only the outlines of which could be seen. In the lower part of the cutis and upper portion of the fatty layer, particularly around the sweat glands, there was marked perivascular proliferation forming areas of a richly cellular tissue, partially obliterating the coil glands when they were involved. There was thickening and occlusion of some of the blood vessels, but others were dilated. There apparently was not enough interference with the vascular supply to account for the necrosis in the corium. The elastic tissue was well preserved except in the subpapillary areas. In the clinically uninvolved skin there was perivascular proliferation and some large vascular channels, particularly in the transitional zone.

The patient had received ultraviolet radiation without benefit.

DISCUSSION

Dr. Morrow: I look on this as a case of Bazin's disease.

Dr. Highman: This case is either erythema induratum of Bazin or perhaps a rare type related to the spontaneous form of gangrene. I think that the histologic preparations, which were excellent, might have supported either hypothesis, except that the structure more or less related to tuberculosis found in erythema induratum was lacking. The microscopic section showed a perivascular infiltration surrounding the larger of the vessels in the corium and deep hypoderm, the vessels themselves being also affected. There was a hyperplasia of the connective tissue, and surrounding the vessels a round cell infiltration without giant cells. One idea suggested itself to me, namely, that these islands might possibly have been infarctions. If actually, on deeper study, it should be shown that these were infarctions, I would favor the diagnosis of a gangrene with scars. I think it is a unique case, or one hitherto unrecognized, which merits further study.

DR. WEIDMAN: I think this case has a neurologic basis. Some of the earlier lesions were covered with extremely thin skin and were depressed. All of us noted the extreme conspicuousness of the veins on the dorsa of the feet, a condition similar to that in acrodermatitis dermia atrophicans. I believe that the involvement of the nerves of the feet would account for all of the changes seen on the extremities, from the atrophic ones on the dorsum up to the more exaggerated degenerative ones which Dr. Highman emphasized.

DR. SUTTON: Some years ago, I saw a somewhat similar case in which there was diffuse involvement of the skin. A few typical lesions of morphea of the atrophic type were present. The case puzzled me, and I asked the patient to consult Dr. Joseph Grindon of St. Louis. Dr. Grindon had seen a similar example, and after talking over the matter with him, I was soon set straight. I believe this to be a case of atrophic morphea.

DR. DENNIE: I have seen some of these cases among the soldiers in France, in whom the lesions were produced by the louse mite. The lesions would last for a long time, producing the same irritation we see here. I think that the woman produces them herself, and that the scars are due to irritation.

DR. HOWARD FOX: As I remember, the lesions were bilateral and symmetrical, a point which speaks against self-infliction. We rarely see such lesions arranged symmetrically on both arms and legs.

DR. WILLIAMS: One feature which has not been mentioned was the marked disturbance with the circulation of the hands. The hands were bluish, and there was distinct thinning of the skin on the hands. Taking this with the other condition I think that atrophic scleroderma is the probable diagnosis.

DR. KETRON: We at first thought about malingering in this case, and although we did not disprove it on clinical grounds, I think the histologic picture of the early lesions would rule it out. I cannot conceive of any local application that would bring about the picture seen in this case. There was complete necrosis of some of the blood vessels in the upper portion of the cutis without any acute inflammatory reaction, and down in the deeper layers there was a marked proliferation of vascular and perivascular tissue without, however, a marked occlusion of the blood vessels. The lesions start as whitish plaques, which often are sore, and the patient complains of a great deal of pain in her legs. I sent her for a consultation with Dr. Bernheimer, who has had a great deal of experience with vascular affections of the legs, and he found that the circulation in the large vessels was good. I regard it as a vasomotor disease of some type, the necrosis being probably due to a spasm of the vessels.

ATROPHY (IDIOPATHIC). Presented by DR. KETRON.

A white girl, aged 18, had a skin disease of twelve years' duration which began in the lumbar region. There had been no subjective symptoms. Over the trunk were numerous slightly depressed patches varying in size from that of a pea to the largest patch, which was located in the lumbar region and measured 9 by 2½ inches (22.8 by 6.3 cm.). This area was well defined, dark brown, and a few small veins were visible on the surface. The smaller lesions were often poorly defined and irregular in outline, but most of them showed increased pigmentation and depression. Two finger-nail-sized patches showed loss of pigment surrounding what appeared to be small pigmented moles. All the lesions were soft, and there was no apparent inflammatory reaction. There was generalized hyperpigmentation and hypertrichosis of the skin. The girl was well developed and somewhat overweight.

The results of a general medical survey by Dr. Sutton (Baltimore) were essentially negative, but he felt that there was some disturbance of internal secretion, manifested by the hypertrichosis and its masculine distribution over the abdomen and face. The basal metabolic rate was within normal limits but showed a tendency to be low. The blood Wassermann reaction was negative.

A specimen for biopsy was taken through the edge of the largest patch so as to include some apparently unaffected skin. The epidermis showed a puckered appearance with some villus-like projections on the surface. There was some perivascular infiltration and thickening of the small vessels in the corium. The elastic tissue was well preserved but compressed in certain areas. There was no definite evidence of degenerative processes.

The patient is being treated with small doses of thyroid extract, in accordance with the recommendation of Dr. Sutton.

DISCUSSION

DR. SUTTON: I agree with the diagnosis of idiopathic atrophy of the skin. With respect to the peculiar vitiliginous lesion, I think Dr. Hyde was first to call attention to it. The little lesions are not at all uncommon. At a clinical demonstration held in the Mayo Clinic a few years ago Dr. Stokes showed six typical and characteristic examples in one morning.

DR. GOLDENBERG: I think the patient presents three types of lesions—leukoderma, morphea maculosa and "cafe au lait" spots, which to me is rather suggestive of Recklinghausen's disease.

DR. CRUTCHFIELD: I think the condition is idiopathic atrophy.

DR. STOKES: I wish to second the suggestion that it may be Recklinghausen's disease. The appearance is not at all uncommon in that disease. A similar case was presented in the Mayo Clinic some years ago, and we attempted to get the patient to allow a removal of the lesions and plastic restoration, but she did not consent.

DR. PUSEY: I think to call it idiopathic atrophy is to use a large name to describe a small condition. She has some sunken areas on her back, but I do not know of any condition of atrophy which would account for this. I think the suggestion of Dr. Goldenberg is what we really need. I wish to object particularly to attaching the label of idiopathic atrophy to a case of that kind. In this case it is simply a descriptive name. There is atrophy, but the case is not one of the sort that is known technically as idiopthic atrophy.

DR. WEIDMAN: I strongly favor the diagnosis of Recklinghausen's disease. The girl gave a history of the condition having begun when she was 6 years of age.

DR. GOLDENBERG: I did not mean the tumor stage of Recklinghausen's disease, but the so-called formes frustes.

DR. MACKEE: I understand that the lesions began as patches of erythema. The most recent lesion over the right scapula is an erythematous patch in which there is no atrophy. The clinical picture would appear to fit the diagnosis of atrophia maculosa cutis.

DR. KETRON: A word about the microscopic changes. The biopsy was taken through the edge of the largest patch so as to include a definite amount of the transitional zone and some of the normal tissue. Sections with connective tissue stains as well as elastic tissue stains showed little difference between the normal and diseased portions, except that in the atrophic skin there was a peculiar wrinkling of the epidermis suggesting some change underneath. The elastic tissue was well preserved.

TUBERCULIDS (?). Presented by DR. PELS.

An American housewife, aged 45, had an eruption of two and one-half years' duration. It began with a spot on the back of the head which felt like a pimple and gradually extended as small "spots" on the neck and near the mouth. The lesions were said to have been like a "blind boil" but sometimes contained fluid. There was considerable itching and some pain at times. The patient gave a history of one miscarriage eighteen years previously of constipation and occasional canker sores. The lesions involved the scalp near the borders of the hair, parts of the face, the upper portions of the chest and upper arms, parts of the lower arms and right hand. They were discrete and grouped, large papules and small nodules, varying in size to 2.5 cm. in diameter, chiefly globular, bright red, round and oval. There was moderate crusting and scarring, with depressions and some excoriations. There was moderate alopecia on the scalp following traumatism. The hair follicles of the scalp were prominent and showed epithelial plugging. On the chest were numerous white scars, with irregular surface. The skin was freely movable in the affected areas and not painful.

The results of physical examination were negative, especially for involvement of the lung. The blood Wassermann reaction was negative; 2 per cent eosinophilia. There was a faint trace of albumin in the urine. The basal metabolic reading was 18.6 per cent above the estimated normal. The tuberculin test was strongly positive to 0.1 mg. and 0.01 mg. Biopsy showed considerable hyperkeratosis, parakeratosis and acanthosis, the chief changes being in the papillary layer. There was considerable dilatation of blood and lymph vessels, together with edema, perivascular small cell infiltration, and occasional abscess formation.

In the treatment various ointments and lotions had been used, including ammoniated mercurial ointment, as well as roentgenotherapy, three one-quarter skin units. During the past two months, the patient had received irradiations with ultraviolet light, and 0.0005 mg. injections of tuberculin, without benefit. Internally she had received iodine.

The location of the lesions on the scalp, with the depressed scars suggested atypical acne necrotica, but other acneform lesions were not present. It was thought that neurotic excoriations could be ruled out, owing to the involvement of the back.

DISCUSSION

DR. HOWARD FOX: This case corresponds with my idea of neurotic excoriations. The patient had intense itching over the neck and back associated with superficial shallow scars.

DR. SWEITZER: I agree with the diagnosis offered by Dr. Fox. I have had a patient with similar lesions in the scalp, which persisted for a number of months. She was cured by the administration of calcium and by being instructed to let the lesions alone when they appeared.

DR. JAMIESON: I agree with the diagnosis.

DR. PUSEY: If I have the woman identified, she had a scaling eruption around the forehead, some patches on the scalp and various scaling lesions on the arms. I am willing to agree that she is a neurotic woman, but I think that she had an itching eruption. I think it is not a pure case of neurotic excoriation. If I had seen it at home, I would have thought considerably of a seborrheic dermatitis in a nervous woman who was excoriating the lesions. I would offer this as a tentative diagnosis and not definitely one of neurotic excoriation.

DR. TOWLE: I agree with Dr. Pusey's remarks.

DR. PELS: This patient was presented with the diagnosis of tuberculids with a question mark, merely because during the physical examination and from the laboratory standpoint it was found that she gave a remarkable reaction to tuberculin. The difficulty in following that factor was that tuberculosis could not be made out clinically. She gave a history of these lesions appearing without any symptoms, and then itching so much that she confessed to having injured them. That brought to our attention the possibility of a neurotic excoriation, but we were much at a loss for a definite conclusion.

DR. GOLDENBERG: Was the reaction to tuberculin focal or general?

DR. PELS: It was focal reaction.

BAZIN'S DISEASE, SYPHILIS (?). Presented by DR. GILCHRIST.

A white woman, aged 35, had an eruption of five years' duration. It began on the right leg as a small, deeply situated, dull red nodule, which was slightly painful and lasted for three months. It did not break down but was excised because it was thought to be tubercular. Other nodules then began to appear, which broke down into punched-out ulcers, and were excised. New lesions continued to appear on both legs and were excised during a three year period. The patient's family physician inoculated a guinea-pig with the material from one of the nodules, and it died in six weeks of tuberculosis. Examination showed nodules in the peritoneum and lesions in the apexes of the lungs.

The Wassermann reaction was negative.

The patient came under Dr. Gilchrist's care two years before presentation with numerous ulcers, and swollen and painful legs. She was placed on antisyphilitic therapy and prompt relief followed, all the lesions healing in about six weeks; this caused one to suspect a syphilitic background. Since then, single lesions had appeared now and again and broken down into punched-out ulcers. Ten Wassermann tests had been negative. When presented she had two small red, deep-seated nodules and two small ulcers, but was otherwise in good condition. It was practically proved that the patient did not have syphilis.

DISCUSSION

DR. WILLIAMS: I think this is a case of Bazin's disease, as the history and the appearance of the lesions all correspond. The point that interested me most was the treatment with ultraviolet light, which was directed to the lesions themselves and which had produced exfoliation. There was no history of general exposure to light, and I think the trend of modern opinion is that the best results in any form of tuberculosis of the skin are obtained by general radiation rather than by that directed to the lesions themselves.

DR. KETRON: I treated this patient for a while with generalized ultraviolet light over the legs, without any definite improvement. From the biopsy a diagnosis of tuberculosis was made, and I think an inoculation in a guinea-pig was positive for tuberculosis.

DR. GILCHRIST: I brought this patient to your attention for this reason: she has been under surgical care for three years, and the lesions were being excised soon after they appeared, with many resultant extensive scars and continual relapses. When I saw her, she had had ultraviolet therapy about a week previously. The lower two thirds of the legs were swollen and reddish; she could hardly walk and was in a miserable condition as she suffered a good deal of pain. There were five ulcers on the legs, and these varied in size from 1 to 2.5 cm. in diameter. They had a distinctly punched-out appear-

ance with a necrotic base. There also were four variously sized, reddish and painful nodules from 1 to 3 cm. in diameter. The ulcers had the appearance more of syphilitic lesions than of tuberculous lesions, although the sections showed more signs of tuberculosis than of syphilis. She was given antisyphilitic treatment by mouth, and she got great relief in forty-eight hours. White precipitate ointment was applied locally. She was practically well in six weeks, but later fresh nodules would appear and some would break down and leave typical punched-out, deep ulcers with a necrotic base. Because the antisyphilitic treatment produced such marked results there was the possibility of a syphilitic background of a case of Bazin's disease. I turned her over to Dr. Keidel and Dr. Moore, and they were unable to get a positive Wassermann reaction on ten trials. I talked with her family physician, and he said he had inoculated a guinea-pig, with positive results. I did not find any evidence of tubercle bacilli in the lesion. The patient improved when she received injections of sodium iodide. Ultraviolet rays always made the lesions worse and caused nodular lesions to break down. The patient is in splendid health now and has lesions only on the back of one leg. I think there is a possibility of the case having a syphilitic background as well as Bazin's disease, although Dr. Moore is fully convinced after his many tests that the patient has not syphilis.

EPIDERMOLYSIS BULLOSA. Presented by DR. ROBINSON.

A girl, aged 23 months, had a condition which had been present since birth. The parents stated that the child was born without skin from the waist down, and that the physician suspected syphilis and had ordered mercurial inunctions. These were continued, but the child became consistently worse, the eruption spreading until the entire trunk and extremities were involved and the face became dry and scaly. The lesions began as superficial blebs, varying in size to that of the palm. They easily ruptured and after evacuation of serum did not continue exudation. They appeared periodically. After an interval of two or three weeks, without the formation of blebs, a thick, dirty brownish skin formed and extended over the entire trunk and extremities. The face had never been involved in this process. When the blebs began to form, this skin would peel off and apparently normal skin would be exposed.

When presented there were several round, denuded areas, slightly moist, and varying in size from a diameter of 1 to 8 cm. There were two unbroken blebs present, one 8 mm. in diameter, the other 2 cm., elevated about 3 mm. and containing clear fluid. The remainder of the skin had a dirty, light brown appearance, was hidelike and peeling at the margins. The palms and certain areas of the arms and abdomen appeared normal. In the areas, except the palms which had never been involved, the brownish hide had recently peeled off. The skin of the face was rough and exfoliating, but had never had any blebs.

The blood Wassermann reaction was negative, and culture from a bleb was negative. Biopsy had been refused.

The child had received thyroid extract, injections of coagulin, solution of potassium arsenite (Fowler's solution) and syrup of ferrous iodide. The greatest benefit had been received from therapy with Kromayer's lamp.

EPIDERMOLYSIS BULLOSA. Presented by DR. GINSBURG (by invitation).

A white child, aged 3, presented an eruption which began eight days after birth. The mother stated that blisters developed from the slightest trauma. Blisters were present in the mouth in the beginning, but none had appeared

since that time. The child had had measles at 8 months of age, but had otherwise been in good health. The mother gave a history of three miscarriages, but apparently none of the feti had vesicular eruptions. The child was undernourished but of normal intelligence. Straw colored and hemorrhagic vesicles and bullae were scattered over the body. The nails were thickened and irregular. The blood Wassermann reaction was negative. Examination of the blood showed: hemoglobin, 64 per cent; leukocytes, 28,400, and polymorphonuclears 64 per cent. The tuberculin test was negative. A soothing lotion and forced feeding were being used.

EPIDERMOLYSIS BULLOSA. Presented by DR. PELS.

A white American child, aged 7½, was first seen when she was 6 years of age. She had two older brothers. Birth was normal, but at birth there were two areas which resembled blood clots on the legs and others appeared on the third day. There were blisters on the tops of the ears. These lesions would appear and disappear, and some had formed on the tongue. During the past two years she had been much improved, but several months ago developed varicella, which was followed by an exacerbation of the disease. The child was of the blond type and had slight strabismus. There was a striking growth of hair on both legs. The face, neck, axillary folds, buttocks, feet and hands were involved in an eruption consisting of grouped and discrete vesicles and bullae, varying in size to 1.5 cm. in diameter, with slight pustulation, and heavy honey-colored crusting. The lesions were in various stages of evolution and on palpation showed moderate infiltration.

Medical and neurologic examination showed nystagmus, a prominent head and shuffling gait, suggesting disturbance in the central nervous system, possibly involving the pituitary. Roentgenograms of the skull with special reference to the pituitary showed no abnormalities. A tonsillectomy had been advised. Ophthalmoscopic examination showed compound myopic astigmatism, haziness of disk, probably due to refractive error, and pallor of retina. The blood Wassermann reaction was negative. The blood count showed: leukocytes, from 16,500 to 19,600; hemoglobin, 60 per cent (Sahli); platelet count, 380,000; polymorphonuclears, 38.5 per cent, and small mononuclears, 54.5 per cent. Biopsy had been refused.

The patient had received soothing lotions and ointments, moderate doses of roentgenotherapy, solution of potassium arsenite and sodium cacodylate. Injections of coagulin (Ciba) were not well tolerated. Vaccines (?) had also been used subcutaneously. The patient was presented for suggestions regarding further investigation and therapy.

DISCUSSION

DR. WILE: I think that Dr. Robinson's little patient with the universal dermatitis presents a type of ichthyosiform erythrodermia. Of course, there are cases of epidermolysis bullosa of long standing that are difficult to differentiate, but I think this is a clear-cut case of the disease that has been so adequately described by our president and others as ichthyosiform erythrodermia. There is good reason for believing that genetically these cases are closely allied to epidermolysis bullosa, but I think this case is not epidermolysis bullosa.

DR. ORMSBY: My impression is the same as Dr. Wile's, that the last two cases are epidermolysis bullosa, but that the first is ichthyosiform erythrodermia.

DR. HOWARD FOX: I agree with Dr. Wile and Dr. Ormsby that there are undoubted ichthyosiform lesions in the first case. The other two cases I consider typical of epidermolysis bullosa.

DR. EHRENBERG: I have seen two cases similar to the last two and agree with that diagnosis.

DR. GOLDENBERG: I agree with the previous speakers that the last two are cases of epidermolysis bullosa, and that Dr. Robinson's case is ichthyosiform erythrodermia. That case has a Nikolsky sign, which may be found in that disorder.

DR. PELS: The patient I showed was presented with the hope that the case would bring out some suggestions regarding therapy. The notes made at the time the child was examined from the neurologic standpoint suggested the possibility of disturbance of the pituitary. This is interesting in connection with the attention recently called by Guy to possible pituitary disturbance in these cases.

ECZEMA. Presented by DR. ROBINSON.

A white boy, aged 18 months, presented a generalized eczema due to sensitization to milk. Four days after the child's delivery the mother developed an itching cutaneous eruption which was distributed well over the body. The lesions were pinkish, slightly hivelike, and largely confluent, although there were many small, irregularly shaped areas. The condition was diagnosed as "toxic dermatitis" and was thought to be due to sensitization to some foodstuffs. It was found that the patient had had a craving for candy and cake, and that these were being supplied to her in generous quantities. All sugars were forbidden, and in a few days the eruption disappeared.

The infant, when first seen, was about 1 month old. The mother complained that the child was losing weight and that she apparently had not enough milk to satisfy the baby. A physician at one of the milk stations prescribed a modified milk diet, alternating with the breast milk. About two weeks after beginning this new diet, the child started to scratch, and soon afterward began to show skin lesions of an eczematous type. In spite of the use of calamine lotion and antipruritic ointments, the lesions gradually became larger and more intensified, involving the face and forehead and slowly extending over the rest of the body. The mother was advised not to use any soap or powder, but benefit was not noticed; the child continued to scratch even when the clothing was removed. The matter of diet was then considered, and the first procedure was to eliminate as much as possible all sugar from the milk. After a week's trial benefit was not noticed. Cow's milk was then removed from the diet, and the child was limited to breast milk. This also was apparently harmful and the lesions continued to increase. Artificial feeding with Mellin's food, dextrose, Dryco, malted milk, in conjunction with prepared barley, were then tried successively, without effect. During these experimental periods crude coal tar ointment, calamine lotion, salicylic acid ointment, aristol ointment, sulphur ointment and boric acid ointment were used as antipruritics, with little if any effect. All forms of artificial milk were then stopped, the baby receiving only water in addition to breast milk. As the skin lesions persisted to a marked degree, the breast milk was stopped and replaced by a diet composed of cod liver oil, vegetables and cereals, with total elimination of milk. On this diet the improvement was prompt and persistent. When presented, local measures were not being used, the child was in good physical condition and free from lesions.

The urine and blood were normal, the skin tests for milk were positive. Eating bread made with milk would cause the lesions to reappear.

ECZEMA (SENSITIZATION), NEURODERMITIS. Presented by DR. PELS.

An American boy, aged 18, had an eruption of thirteen years' duration. It appeared after he was given raw eggs in the diet. The condition had varied considerably, at times almost completely disappearing. It was not especially influenced by seasonal changes. There was no history of hives. The eruption involved the face, ears, scalp and neck, being less pronounced on the extremities, trunk, perineum and genitalia. There was moderate dermographism. The eruption consisted of small, bright red papules, discrete and grouped, occasionally forming typical but small, ill-defined patches. The secondary lesions were chiefly punctate and linear excoriations, occasionally fresh crusting, which was honey colored, and moderate scaling. The affected areas were slightly infiltrated but not lichenified.

Three years prior to presentation the skin reaction to egg-white was pronounced; recently there had been slight if any reaction to egg, but a moderately positive reaction to pork. The blood chemistry was entirely normal; the differential count showed 4 per cent eosinophils. Basal metabolism test or biopsy had not been attempted. There was a history of asthma before the age of 5 and of ethmoiditis. A vaccine had recently been made of cultures obtained from the ethmoid sinus.

The patient had received numerous roentgen-ray irradiations with the hydrogen tube, various areas being treated in a period of two years, with only temporary relief. Bland ointments and lotions gave partial relief. Internally he had received calcium lactate, thyroid extract, cod liver oil, and recently a compound solution of iodine. He had been given increasing amounts of raw egg and was eating one or two eggs daily, without bad results. Injections of whole blood, intradermic injections of from two to eight wheals every three or four days, fourteen injections in all, gave temporary relief only. Vaccine therapy was now being continued.

DISCUSSION

DR. GILCHRIST: Dr. Harry Robinson made some interesting observations regarding his case. He has had this child under observation for six years, found the child showed sensitization to milk, and asked the parents to replace the milk with cod liver oil. As long as this was done the child did not have eczema. He proved that the eczematous lesions were due to ingestion of milk on various occasions. I think it is unusual to observe and watch a case in this way for such a long period of time and show that a child can be brought up on cod liver oil instead of milk.

DR. SUTTON: I was much interested in these cases and especially in that of the infant. Dr. Duke of Kansas City has done much original work on allergy. I consider this a typical example of this phenomenon. Personally, I should call the case one of "anaphylactic dermatitis." It is extraordinary to what substances one's skin may become sensitized, and not infrequently the sensitization is extreme in degree. For instance, I have seen a case in a young child in which egg was the irritating factor. So extremely sensitive was the patient to this substance that the mere presence of an egg in the same room would provoke an attack. I realize that this is an extreme statement, but it is a fact.

XERODERMA PIGMENTOSUM (TREATED WITH ULTRAVIOLET LIGHT RADIATION). Presented by DR. L. W. LORD.

A white boy, aged 4, had a disorder of three and one-half years' duration. When he was 6 months of age his mother noticed marked freckling over the bridge of the nose, which spread rapidly to involve the face then the entire

body. At 2½ years of age wartlike processes began to appear on the face and neck. There had been photophobia ever since birth. Measles and chickenpox at 3 years were the only diseases, and his general health had been excellent. The parents and one sister, aged 6, were living and in good health. There was no history of similar or other skin disease in the family or collaterals. The mother and father were cousins, once removed.

When first examined the child presented considerable freckling over the face, neck, trunk and extremities. The skin was dry and had an atrophic look but was fairly soft to the touch. There was an almost constant blepharospasm, the patient being unable to stand even indirect light. There was also considerable lacrimation. Over the forehead there were four large pea-sized ulcers, covered with a horny crust, one dime-sized lesion over the left temple, and from twenty to twenty-five keratotic areas varying in size from that of a pinhead to that of a glass pinhead. Beneath both eyes, on the bridge of the nose, about the openings of the nostrils, at the angles of the mouth, and over the chin there were a large number of similar keratotic areas, a few of which showed shallow ulcerations. On the back of the neck were four lesions, varying in size from that of a pea to that of a dime, covered with horny crusts; the largest was superficially ulcerated.

The patient had not received any internal medication. Treatment with ultraviolet light was started on Nov. 30, 1926, the first dose being two seconds to the front and back of the entire body, at 30 inch (76.2 cm.) target distance. The treatment was given regularly at semiweekly intervals. The dose was gradually increased, great care being taken that exposure was not sufficient to give the slightest reaction, either subjectively or objectively. When the patient was presented, he was receiving treatment for sixty seconds at a distance of 24 inches (60.9 cm.). Under this treatment the skin had gradually assumed a more general pigmentation, though the freckling was still apparent. The texture had become softer, the atrophic appearance had disappeared, except over the upper arms, the keratotic growths had become less in size and number, all ulcers had healed, lacrimation was greatly decreased and the patient's eyes could stand a certain degree of light.

DISCUSSION

DR. SCHAMBERG: It seems to me that we commonly give long Latin names to conditions and endeavor to catalogue them without attempting to throw any light on their significance. I was interested in this case because on interrogation the mother stated that her husband was her first cousin. Many cases of xeroderma pigmentosum are reported in the literature in which no statement is made as to consanguinity. I had one of my students go over the literature last year, and it was astonishing to find how high the percentage of consanguinity is. I think it would be interesting if we would report the parentage relationship of all these patients, and I believe it would throw great light on the subject. That would merely establish a possible clinical cause; there would still remain the investigation of the biologic effect of the consanguinity.

DR. COLE: I have a case of xeroderma pigmentosum in which the parents are first cousins. In the treatment of these lesions, which become malignant, I have noted that they are sensitive to radiotherapy, even to small doses of radium, unless used with the greatest care.

DR. WILLIAMS: I wish to echo what Dr. Cole said about small doses of radium. They work well in this way, and a small fraction of a dose will clear up the lesions. It is inconceivable that consanguinity in marriage should be a factor, unless the condition is on both sides of the family. Considering

the mendelian laws, for this to occur it must be recessive and if on both sides of the family, the disease may occur. Consanguinity itself is not enough, if one will consider the large proportion of such marriages. One cannot find many families in New England in which the families have not intermarried for two hundred years or more, and we rarely see any cases of xeroderma pigmentosum.

DR. GILCHRIST: I saw a pamphlet which Dr. Bloodgood had received and which was headed "Sunlight Causes Cancer." The case described in the letter was that of a woman who had lost two children from xeroderma pigmentosum and was fearful that she would lose a third one. She kept the third one out of the sunlight as much as possible. She was convinced that sunlight was the cause of the disease, and since epitheliomas appear on the face in this disease, this will explain the title "Sunlight Causes Cancer." I think it is the quality of the parents and not the consanguinity that matters.

PAPULAR ERYTHEMA, URTICARIAL TYPE OF TOXIN ORIGIN. Presented by DR. PELS.

An American housewife, aged 68, had an eruption of nine years' duration. It began on the hand as hives, gradually spread and had never completely disappeared. On awakening, her eyes were closed because of irritation. She had felt sleepy and "heavy" before the erruption appeared. The lesions appeared in crops, accompanied, by severe itching, and the eruptions spread especially when she was overheated or after exertion. There was no pronounced dermographism. The entire trunk, extremities, scalp and face were involved. The lesions were urticarial papules, ringed, oval and round, also umbilicated, varying from deep fawn to pink, discrete, grouped, more rarely confluent, even suggesting vesiculation at times. They varied in size from 2 to 3 cm. in diameter, and on palpation were firm and deeply infiltrated, but not painful. There were numerous excoriations, and the color was more intense at the periphery.

The patient had nocturia, and quiescent, moderately advanced pulmonary tuberculosis. She also had chronic undernutrition, a moderate degree of secondary anemia and was of a nervous habitus. She said that she had been "operated on for peritonitis" twenty-eight years previously.

All laboratory tests had been negative, including the blood Wassermann reaction, cultures and scrapings from the lesions, and bacterial protein tests with numerous organisms. Tuberculin tests had not been made because of the positive physical observations. The blood and differential count were normal except for 80 per cent hemoglobin. Biopsy showed flattened epidermis (pegs), moderate superficial edema, dense infiltration in the subpapillary layer, perivascular infiltration, numerous eosinophils, plasma cells and polymorphonuclears in small numbers.

In the treatment, lotions and salves had been used to relieve the symptoms, several teeth had been extracted, and the patient had received ultraviolet light irradiations. Internally she had received mercuric salicylate, bromides, calcium chloride, dilute hydrochloric acid, Basham's mixture and compound Blaud's pills. A series of whole blood autogenous injections had also been given subcutaneously.

DISCUSSION

DR. PUSEY: I do not know any condition technically described as toxic urticarial erythema, and as I have indicated in another discussion, I think it leads to laborious confusion to attach descriptive names to cases as though

they were technical specific names, but if I have this case correctly in mind the patient had annular patches on her trunk that were erythematous, slightly thickened, some with linear formation and others solid plaques. She was an old woman and to my questioning said that the lesions itched considerably. I do not see how one can exclude the early stage of mycosis fungoides.

DR. MCEWEN: I thought of the possibility of the early stage of mycosis fungoides.

DR. WILE: I would suggest that the condition may well be a dermatitis herpetiformis.

DR. GUY: The patient gave a history that might well have been that of recurring toxic erythema, which did not account for the sharply demarcated lesions on the abdomen. These lesions, although I do not remember the duration of them, suggested the possibility of a fungus infection as the underlying element in those particular lesions. The patient had no teeth, either false or natural, and therefore, insufficient mastication of her food was ample reason for disturbance in the intestinal tract.

DR. C. GUY LANE: As I saw the patient with the pigmented, rather sharply outlined areas on the body, with a history of itching and the presence of much scarring, the diagnosis of dermatitis herpetiformis presented itself to me also.

DR. PELS: The history of this patient indicated that the lesions were evanescent. There were never any vesicles that we could notice. The fresh lesions were definitely urticarial and were also papular. They were firm, and we used that term because they remained on the skin from a number of days to several weeks. The crusting, which indicated possible vesiculation, followed scratching. There was never any of the appearance that one associates with dermatitis herpetiformis. The etiologic factor we considered possibly to be her pulmonary tuberculosis. She has always been considerably run down, with exacerbations of gastro-intestinal symptoms, because of the fact that she could not chew her food properly. The biopsy showed no indication of mycosis fungoides, which we considered at least two years previously. The last lesions have come only to disappear and return in other places.

KERATOSIS PALMARIS ET PLANTARIS. Presented by DR. KETRON.

A man, aged 46, a contracting engineer, had a condition of the palms and soles of from six to eight years' duration. About one and one-half years before presentation a carcinoma developed on the scrotum and was excised. In the past few weeks enlarged glands had appeared in the left groin and had been removed. Another carcinoma developed on the left hand about one year prior to presentation, and this was also removed surgically. When presented there were numerous pinhead to pea-sized keratoses scattered over the hands and feet, with some large hyperkeratotic patches on the soles. There was nothing in the history to suggest that the patient had taken arsenic, or that he had had come in contact with it in his work.

Special preparation of one of the lesions for demonstration of arsenic crystals was negative.

KERATOSIS PALMARIS ET PLANTARIS. Presented by DR. KETRON.

A man, aged 45, a machinist, began to develop this condition about fourteen years before presentation. For twenty-five years, until about three years ago, he was engaged in taking care of machines used for making brass buttons, etc. He had developed several cancers during the past two years, one of

which caused him to lose his finger. His hands and feet sweat excessively. When presented, he showed numerous keratoses and warty lesions scattered over the palms and soles and the tops of the fingers. They varied in size from that of a pinhead to that of a pea. Some were raised and verrucose in appearance, while others were flat and capped with a black, adherent, keratotic scale. On the palmar surface of the right hand were two denuded areas, representing small cancers which were healing after roentgenotherapy. On the left hand, just above the wrist, there was an irregular, dime-sized inflamed patch with a greasy crust, suggesting a precancerous dermatitis. On the bottoms of the feet there were also large callosities. There was nothing in the history to suggest that the patient had taken arsenic or had come in contact with unusual amounts of it.

Results of general examination were negative. The brass filings to which the patient was exposed during his work for many years were analyzed for arsenic, showing 0.0074 per cent, which was considered too small to have any etiologic relation to the disease. One of the keratoses was excised and examined according to the method advised by Osborne for the demonstration of arsenic, with negative results.

KERATOSIS PALMARIS ET PLANTARIS, HYPERHIDROSIS. Presented by DR. PELS.

A Russian woman, aged 23, a stenographer, had a condition of thirteen years' duration. It began with a continuous burning sensation of the soles, associated with extensive callus formation. There was extreme discomfort and interference with walking. Eight years before presentation, the hands became affected in a similar manner. There was a burning sensation, the right palm showed scaling and on the left hand the fingers only were affected. No history of hereditary influence was obtained. The skin borders of the nail also were affected.

The usual laboratory tests, including a blood Wassermann test, were all negative. Tests for arsenic had not been made. Biopsy revealed pronounced parakeratosis, acanthosis, thickening of the rete pegs, edema in upper corium, marked enlargement of the blood vessels, moderate perivascular infiltration and normal connective tissue. Nevoid changes were not observed.

Curettement of the soles had given a temporary good result. Walking caused recurrence of the callosities. Radiotherapy, both radium and roentgen ray, had been unsuccessful. Seven years before presentation, both great toes were amputated. Following attempts at cauterization, skin grafting was done, using pinch, full thickness and flap grafts. Thirty-six operations were performed. There was a tendency to recurrence of hyperkeratoses in the edges of the flaps made in the plastic repair. Two years prior to presentation a periarterial sympathectomy was performed on the right leg, without any effect. There had been a total of fifty-six operations, but all treatment had been disappointing. There was partial paralysis of the legs and feet from the disease and from disuse, and the patient was forced to use crutches.

DISCUSSION

DR. WILLIAMS: Dr. Pels' case interested me. The feet have been greatly interfered with, and it is hard to say much about them, but the lesions on the hands were definitely inflamed, and I think definitely of infectious origin. My guess would be that it was tuberculosis. It is certainly inflammatory and not keratosis per se.

DR. HOWARD FOX: I think the first two cases were typical of arsenical keratosis, and I should like to know whether there is any history of ingestion of arsenic.

DR. COLE: I agree that the diagnosis in the first two cases is in all probability arsenical keratosis, but more from the photographs than the actual condition at present. I should like to suggest the possibility of gonorrheal keratosis in Dr. Pels' case.

DR. SCHAMBERG: I asked one man if he had taken any medicine, any drops at any time, and he said he had. I think the case is typical of arsenical keratosis.

DR. HIGHMAN: To make a diagnosis of gonorrheal keratoderma several constant factors must be present: first, gonorrhea, second, the development of lesions under the dressings usually applied over inflamed joints. None of these symptoms exist, and it seems to me that whatever the cause may have been in Dr. Pels' case, it is unlikely to have been gonorrhea.

DR. KETRON: The two cases I presented were shown particularly to get an opinion as to whether one should make a diagnosis of arsenical keratosis on the appearance of the lesions alone; in other words, is there an acquired keratosis of the palms and soles clinically identical with the arsenical type but due to another cause? I have talked to both patients on many occasions, but have never obtained any history of either of them having taken arsenic. One of them said that he had never taken any medicine of account except for a short time when he had typhoid fever. In the case of the machinist who worked with a button making machine practically all his life, starting as an apprentice, I had the brass shavings examined for arsenic and the chemist thought the amount of arsenic was entirely too small to account for the disease.

DR. MORROW: I obtained the same history from one man that Dr. Schamberg did, that he had taken medicine by drops for several months. I think both cases are typical of arsenical keratosis.

DR. PELS: Dr. Highman has answered Dr. Cole's question in regard to the possibility of a gonorrheal etiology in the patient I showed. I have been interested in this because the lesions have always been associated with hyperhidrosis and after every plastic operation, which was always performed by splendid surgeons, the same type of hyperkeratoses always appeared at the edge of the plastic flaps. This girl has been incapacitated on account of her feet, and the question is, shall she have them amputated in order that she may be able to walk?

DEGENERATION OF SKIN. Presented by DR. KETRON.

A white man, aged 37, presented a condition of one year's duration. It was noticed because the skin did not tan when the patient became sunburned. The area became sore about four months before presentation but soon healed under local applications. There had been no other subjective symptoms.

On the lower portion of the back of the neck and upper part of the shoulder on the right, there was a triangular patch measuring 3½ by 2½ inches (8.8 by 6.3 cm.), with an opaque, whitish appearance around the edge and a slightly yellowish tint toward the center. There was no definite induration, but the affected area seemed to be slightly less supple than the normal skin. The surface was smooth and perhaps slightly depressed, although this was not definite. Around the edge of the patch were numerous small whitish macules of the same appearance as the large lesion.

A biopsy specimen had been taken through the edge of the lesion so as to contain some of the apparently normal skin. In the papillary and subpapillary layers the collagenous tissue had a rather hyaline appearance, and there was a marked decrease in vascularity in the transitional zone. There was dilatation of the vessels, with some thickening and perivascular round cell infiltration. The elastic tissue was well preserved.

DISCUSSION

DR. PUSEY: It seemed to me that I could find a violaceous border to this lesion and would like to know how we can exclude morphea.

DR. WEIDMAN: I think this is a case of "elastic degeneration in scars" described by Dreuw. As to what the original scar is caused by, I am not in a position to say. The definitely yellow center, together with the white scar in the periphery makes this an almost certain diagnosis.

DR. SWEITZER: I agree with the diagnosis of morphea.

DR. HOWARD FOX: As pigmentation is a well recognized feature of some cases of scleroderma, I think that morphea might well be considered in this case.

DR. KETRON: I agree with Dr. Weidman, for there was not a marked degeneration of the elastic tissue in the case.

A CASE FOR DIAGNOSIS, PEMPHIGUS (?). Presented by DR. GINSBURG.

A Russian Jew, aged 47, had a disorder of eight months' duration, which first appeared over the sternum with numerous bullae, associated with burning and itching. Lesions appeared over the shoulder and scapula six weeks before presentation. He gave a history of varicose ulcers ten years previously, and at present had varicose veins and an associated dermatitis. There was a moist, reddened, slightly infiltrated patch over the sternum, which was seen to be made up of recent collapsed bullae. There were also several bullae in the axillae, over the region of the right shoulder, and the pigmented relic of a former bulla in the region of the left scapula near the angle. There were no lesions in the mouth or around the anus. The blood Wassermann reaction was negative; the urine was normal. The patient had not consented to a biopsy. He had received sulphur ointment and several fractional doses of roentgenotherapy. For ten days before presentation, he had been treated with only soothing lotions and simple ointments. The lesions in the axillae had not been treated.

STRAW ITCH (?). Presented by DR. GILCHRIST.

A white man, aged 33, had a disorder of five weeks' duration. Because of fractured ribs adhesive plaster had been applied, which irritated the skin, and the lesions had gradually spread from this area. Faint dermatographia was present on stroking the skin. There were numerous pale red, vesicopapular, pinhead-sized lesions on the upper and lower extremities and trunk, but none between the fingers or on the genitalia. There was marked itching, many of the lesions having the tops scratched off, and some showing scab formation. There was a history of the patient having slept in a strange bed. No other members of his family had any skin lesions.

DISCUSSION

DR. WILE: Although this is not exactly the season that one would expect to find the condition, I venture to suggest that it closely resembles the cases

we see in the summer that are due to the harvest mite. The demonstration of the mite in the lesion itself, in anything but the best possible light, requires a lens. It can be seen as a less than pinpoint-sized insect. I examined this patient in the best light available and thought I could see the harvest mite. I therefore offer the diagnosis of Leptus dermatitis.

DR. SCHAMBERG: I think it can be definitely said that this is not a case of straw or grain itch. The lesions are different.

DR. OTTO H. FOERSTER: I think the lesions are manifestations of activity of the Leptus mite.

DR. GILCHRIST: I had seen a typical case similar to those Dr. Schamberg described so thoroughly in his monograph on eruptions due to straw itch, and as this patient presented somewhat similar lesions, I therefore presented it as a case of probable straw itch dermatitis. He gave a history of having slept in a strange bed some time previously. The patient lives with his wife and family, but none of them have any lesions. I thought there was a possibility of the lesions being due to *Leptus autumnalis*. I am sorry that there had been no time for examining the lesions for the straw itch mite.

DR. WILE: The man gave a definite history of having developed this condition immediately after coming in from a little journey to the woods.

TUBERCULOSIS VERRUCOSA CUTIS IN A NEGRO. Presented by DR. GILCHRIST.

A man, aged 54, gave a negative history for tuberculosis. The lesions were situated on the dorsal surface of the left hand, left forearm and left elbow, and consisted of discrete areas made up of papillary hypertrophies, some topped by crusts. On pressure, pus exuded from the edge of the lesions. No *Blastomyces* had been found. The lesions were typical of tuberculosis verrucosa cutis.

LUPUS VULGARIS. Presented by DR. GILCHRIST.

A white man, aged 28, had a disease of nine months' duration, which appeared while working at a coke oven, the steam from which irritated the nostrils. There was no history of nasal discharge. About this time he had a gonorrheal urethritis. One or two fingers on both hands were swollen at the joints, and this condition appeared before the lesions about the nose. The teeth were bad, and the tonsils were ragged. Pinkish-red, indurated papules were closely aggregated on the edge of the nostrils. The blood Wassermann reaction was negative. Biopsy showed tuberculosis.

LUPUS VULGARIS. Presented by DR. GILCHRIST.

A woman, aged 65, had a disease of sixty years' duration on the left side of the face. It was typical of lupus vulgaris.

DISCUSSION ON CASES OF VERRUCOSA CUTIS AND LUPUS VULGARIS

DR. GILCHRIST: I think there is nothing to discuss about the first two cases. The last case, that of a woman, aged 65, with a typical lesion of lupus vulgaris occupying the whole left side of the face and part of the neck, is interesting, and I think it astonishing that she has had lupus vulgaris for sixty years and presents an untreated example of this disease. The lesion is smooth and nonulcerative, and it has increased in size rapidly during the last five years. I also wish to call attention to the rarity of lupus vulgaris in

this country now. In Europe these cases are seen much more frequently. I advised the patient to let the lesion alone because it was not particularly disfiguring.

DR. PUSEY: I recall a case I had several years ago in which there was a mass of infiltrated lupus vulgaris which never broke down. That man ultimately died of a carcinoma which developed on his cheek, and he never had roentgenotherapy. In regard to treatment, I would suggest that the best thing is to "let sleeping dogs lie."

PARAPSORIASIS LICHENOIDES. Presented by DR. L. W. LORD.

A white man, aged 57, presented an itching rash of six weeks' duration on the trunk and extremities. This was the first skin trouble the man had ever experienced. The onset was rapid and was ushered in by an itching sensation. Within two days the eruption became fully manifest. Over the lateral surfaces of the trunk, and extending over the entire surface of both upper arms, the flexor aspects of both forearms, down around the thighs and over the legs, there was a symmetrically arranged eruption, consisting of discrete, grouped and confluent, brownish macules. The skin of the involved parts had a somewhat atrophic feel; there was a small amount of wrinkling, and a sparse, adherent, whitish scale.

The patient was seen for the first time on the day of presentation and had not received any treatment.

PARAPSORIASIS ERYTHRODERMIE PITYRIASIQUE EN PLAQUES DISSEMINÉES. Presented by DR. PELS.

A white man, married, aged 37, born in the United States, had a disorder of sixteen years' duration. It first appeared on the body as small round spots which gradually increased in size, and never disappeared. There was no subjective symptom. He was first seen one and one-half years before presentation. The lesions were situated on the trunk, left arm, flanks, lower portion of back, anterior aspect of both thighs and pubic region on the right side. They were well defined, round and irregularly round, slightly raised macules, principally discrete, partially grouped. They varied in size to 12 cm. in diameter, and were light to brownish pink. The secondary lesions consisted of a combination crust and scale. On palpation they were dry, with slight infiltration. Blood tests and blood chemistry tests were declined by the patient. Biopsy showed striking changes, all superficial. The rete showed thickening, acanthosis, uniform parakeratosis and a suggestion of slight subpapillary edema. Basal metabolism test was declined. Examination for fungus was always negative.

For treatment, lotions and a modified Whitfield ointment had been prescribed. A course of ultraviolet irradiation caused a severe dermatitis, but no ill effects resulted, and there was almost complete disappearance of the eruption. Internally, the patient had received a solution of potassium arsenite, calcium chloride 40 grains (2.60 Gm.) three times daily, and tabloids of mixed glands (no. 1) containing testicular extract.

Eight months before presentation there was a reappearance of the eruption, including the severely burned area but not in all the others. Roentgen-ray and arsenical therapy was declined. The patient was presented for suggestions regarding a survey to determine the etiology and also for therapy.

PARAPSORIASIS. Presented by DR. GINSBURG.

A white woman, aged 19, had an eruption of ten years' duration, unaccompanied by itching. It was said to be better during the summer and worse

during menstruation, but she had not been completely free from lesions since the onset. With the exception of the face, palms and soles, the distribution was general. The eruption consisted of pink and slightly brownish, discrete and some confluent, superficial scaly macules and papules, with a tendency to a retiform arrangement.

A routine Wassermann test of the blood was negative; icebox fixation was used. The blood sugar tolerance test was negative. Examination of the teeth by a dentist showed atrophic enamel, probably due to infantile malnutrition.

The eruption disappeared after two courses of five injections each of neoarsphenamine, but there was a prompt relapse. There was another disappearance of the eruption after intradermal and intramuscular injections of a nonspecific milk preparation, with a prompt relapse. There was marked improvement after twenty exposures to the ultraviolet light, with prompt relapse.

PARAPSORIASIS. Presented by DR. GATELY.

The patient was a housewife, aged 26, who said that the lesions first appeared on the forearms eight years before presentation, three months after she had received a hypodermic injection of medicine for a menstrual disturbance. When first seen there were numerous maculopapular lesions, some angular and purplish, others red and scaly, but they did not bleed on removal of the scale. On the neck, chest, arms and thighs there was usually a pinkish, erythematous condition, dry and scaly. The superficial skin vessels over these areas were distinctly red. The condition was said to be much worse in cold weather. One year previous to presentation, pigmented areas began to appear at the side of the superficial blood vessels and were apparently slowly increasing in number. A few were fading. The patient complained of dryness and burning but no itching. Her general health was good; menstruation was normal; the follicles of the tonsils were enlarged. The blood Wassermann reaction was negative; the urine was normal. A histologic specimen was exhibited.

She had received mercuric chloride intramuscularly, a nonspecific milk preparation intramuscularly and intradermically, roentgenotherapy of the forearm and leg (excluding pigmented areas), solution of potassium arsenite over a three months' period and ovarian extract.

DISCUSSION

DR. GOLDENBERG: The first case I would not accept as parapsoriasis. It impressed me as being dermatitis on top of what the French call "eczematides pityriasiformes," and what we call seborrheic dermatitis. The last case I think looked like poikiloderma atrophicans, but there was no atrophy.

DR. WISE: In the last case I thought the lesions were those of angioma serpiginosum; they were similar to those occurring in the case of a woman aged about 26, published by me about ten or twelve years ago. In this woman the pigmentation was more pronounced than in my case, but the superficial telangiectases, especially of the breasts, were suggestive of angioma serpiginosum. The young woman presented by Dr. Ginsburg had lesions which I could not diagnose as parapsoriasis. The primary lesion seemed to be a capillary telangiectasis, not a true lichenoid lesion. In her case the telangiectasis was most marked on the breasts. It looked to me more like a primary telangiectasis than parapsoriasis.

DR. WILE: I agree with Dr. Wise, except concerning the diagnosis of parapsoriasis in the patient presented by Dr. Lord, the man with the brownish

discoloration on the breasts. In that case the condition had been present for only six weeks, and I think that there was not much resemblance to true parapsoriasis. That man, I think, could have been presented with a diagnosis of involuting lichen planus.

DR. E. L. OLIVER: I agree with Dr. Wile and think the pigmentation might have been due to arsenic which he has been taking.

DR. WILLIAMS: I wish to call attention to one feature I noticed in the man with the lesions scattered over the body. It was peculiar that the lesions on one hip had distinctly keratotic masses, with the keratoses projecting deep into the skin. It looked as if the removal of these keratoses would leave scars, and I think that may be a case of parapsoriasis atrophicans.

DR. GILCHRIST: I think the case of the patient with lesions on the breasts was interesting. I have seen a case of poikiloderma vascularis atrophicans in this country and studied it thoroughly before Dr. John Lane published his complete and thorough article on this disease, and I saw another case in Strasbourg two years ago. There is not much atrophy in the case, but all the classic features of the disease are not always present, and I am more inclined to a diagnosis of poikiloderma vascularis atrophicans than to parapsoriasis.

DR. PELS: In reference to the suggestion Dr. Williams brought up in connection with the lesions on the man's hip, you may be interested to know that through some accident the patient received three or four times as much ultraviolet irradiation in that area as was intended. There was a severe burn which healed completely, and the eruption has healed almost entirely. In that one location there is a little hyperkeratosis, and whether the ultraviolet irradiation is responsible for that or not, I do not know.

DR. JOHN E. LANE: I will reply to the question of how many cases of poikiloderma I have seen. In addition to the case I described in full, I have seen one other typical case in my own practice, a patient who was later cared for by Dr. Whitehouse. I have also seen another typical case of a patient who was also under the care of Dr. Whitehouse. I have seen a number of cases resembling poikiloderma presented at different meetings which later turned out to be some other condition. A recent case of my own was presented before the New York Dermatological Society for diagnosis, and all agreed with me that at that time the condition resembled poikiloderma more than anything else, although it was not typical. Within from two to three months after this case was seen, the diagnosis of mycosis fungoides was easily established. This patient shows a few spots on the thigh which somewhat resemble poikiloderma. In the other locations, the lesions do not appear like poikiloderma to me.

DR. MCEWEN: I found what seemed to be a definite lesion of lichen planus in the mouth of the man referred to by Dr. Wise, the case presented by Dr. Lord.

DR. POLLITZER: As to the case which has been discussed as parapsoriasis or lichen planus, I do not think it falls in either of these categories. It was of only six weeks' duration, and I cannot imagine a lichen planus coming out so extensively and subsiding without leaving any trace of lichen planus papules within so short a time. In parapsoriasis the picture is different. I do not know what the man has, but I was struck with the entire absence of any apparent structural changes in the skin.

DR. MITCHELL: I thought the case presented by Dr. Lord was one of lichen planus. The patient had annular lesions on the right breast, and the lesions

on the forearms were shiny. I finally discovered that the two white lesions in the cheek observed by Dr. McEwen were remnants of peppermint candy which the patient had been chewing.

PRURIGO NODULARIS. Presented by DR. KETRON.

An unmarried woman, aged 49, had a disorder of six years' duration, which started on the hands and feet and had gradually spread upward. Itching had been severe. When she was 18 years of age, she was told that she had eczema on the back. She complained a great deal of "sick headaches" before the eruption appeared and now had numerous complaints of neurotic type. The tonsils were removed ten years before presentation, and she had some sinus and nasal operation at the same time. Most of her teeth had been extracted.

The lesions consisted of pinhead to pea or bean-sized roundish, elevated nodules which were rather profusely scattered over the legs, arms, hands and feet. A few of recent appearance were present on the thighs, neck and face. Some of the smaller lesions were reddish and smooth, while the majority of the larger ones were whitish, with a rather fine, verrucose surface. There was a diffuse thickening and reddening of the skin in certain areas. Various examinations made in the gastro-intestinal, gynecological, medical and dental clinics showed nothing important. Numerous skin tests, including some of the pollens, were negative. The blood Wassermann reaction was negative, and the blood calcium was normal. Biopsy of one of the nodules showed marked hyperkeratosis and acanthosis. In the cutis down to the coil glands were numerous collections of cells, principally of the small, round type, lying in a highly vascularized stroma. A moderate number of eosinophilic leukocytes were found in the dilated vessels, a few having wandered out into the surrounding tissues.

Glandular extracts, large doses of calcium, ultraviolet light and roentgenotherapy had brought about no improvement.

DISCUSSION

PROFESSOR PAUTRIER: I think that prurigo nodularis is not a good term and that it should not be employed. I think urticaria perstans is also a poor term. The dermatologists find a great many lesions described as lichen planus, in the textbooks, and I think it is a mistake. Lichen planus is well defined by clinical lesions with small papules, and definitely by the histologic lesion. Lichen planus remains for a few weeks or months, sometimes one year, but not longer, but this type remains ten, fifteen or twenty years. One can never find more than the little papule. The histology is different. I think that the condition is a lichenification and that the little papules are due to the itching.

DR. WILLIAMS: I was much interested in the remarks of Dr. Pautrier. I observed one of these cases carefully for months and in that time was convinced that the tumor formation preceded the itching. There have been a number of cases described in the American literature, and I think in all it is believed that tumor formation is necessary for the diagnosis. I think the tumor formation occurs first and the itching secondarily, thus removing these cases from the group of neurodermite.

DR. SCHAMBERG: Several years ago Dr. Hirshler and I described two cases in negroes under the title "multiple tumors of the skin associated with itching." I agree that the name prurigo nodularis is a poor one. I believe the itching appears before the formation of the tumors. We know that in negroes there is a marked tendency to fibrosis with epidermal thickening and increased cornification, particularly following such traumatism as scratch-

ing. It appears to me that as far as possible we should adapt our nomenclature to suggest the underlying condition, and I think the name Dr. Pautrier has given it presents a better idea of its pathogenesis than the names which have been given it in different countries.

DR. COLE: During the past year I have had one of these cases in which the patient has developed a process almost as characteristic as the one seen today, but not so many lesions. That patient answers all the requirements Dr. Pautrier has laid down. This patient gradually became more and more nervous and developed symptoms rather suggestive of thyroid disease. A basal metabolism test showed + 45. We have referred the patient to the surgeons.

DR. GOLDENBERG: I agree with Dr. Pautrier and Dr. Schamberg and am sure that the constitutional conditions are responsible for the tumor formation. This was first brought to our attention by Arning, who was suffering with lichen planus, and a few years later tumors, so-called "noduli cutanei," developed, showing that the primary condition is a pruritus and that the tumor formation is secondary.

DR. JOHN E. LANE: I was pleased to hear Dr. Pautrier discuss this case. We have clung to the name prurigo nodularis in spite of the fact that it seems to be well demonstrated that the condition is a variety of neurodermatitis. It seems to me that it would be well to call it neurodermatitis nodulosa which I think was the term given it by Brocq.

LICHEN PLANUS ATROPHICUS LINEARIS. Presented by DR. KETRON.

A school girl, aged 15, had a skin condition which began on the back of her hand when she was 4 years of age. It had gradually increased in size. There had been no subjective symptom. The disorder consisted of several linear patches extending from the back of the hand and little finger over the extensor surface of the left arm almost to the tip of the shoulder. The patches were composed of confluent or discrete units, varying in size from that of a pinhead to that of a quarter. The earliest lesion was a small spot, of normal skin color and appearance, showing nothing except a peculiar, fine threadlike, elevated edge which was easily overlooked. The well developed patches in the majority of cases were depressed, pinkish or brownish, showing whitish striae and dilated capillaries on the surface. Some of the hand lesions showed hyperkeratosis with plug formation.

Biopsy included a pea-sized lesion on the upper arm. It showed a mild hyperkeratosis, with prominent granular layer and intracellular vacuolization of the lower cells of the epidermis. In the cutis there was a mild perivascular infiltration of small round cells, and some of the vessels were dilated and thickened. In the papillary and subpapillary layers the collagenous tissue showed a fine, reticulate appearance, with loss of elastic tissue. There were numerous cells containing pigment granules.

DISCUSSION

DR. OTTO H. FOERSTER: I wish to offer the diagnosis of porokeratosis in this case. I think the lesions are of mixed type, including a nevus with which we have become familiar in the recent literature. A large patch on the ulnar edge of one hand is typical of porokeratosis, showing the trench almost surrounding the lesion. There are similar small lesions on the forearms and some small lesions the size of a pinhead showing the typical trench.

DR. GEORGE HENRY FOX: I am inclined to believe that this was not a case of lichen planus. I think no one ever wrote a description of a hitherto

undescribed disease that was as good as Dr. Erasmus Wilson gave of lichen planus. To be sure, some other forms have been described since, but his description so far as it went, was accurate and has never been improved on. We all know that the typical polygonal papule is not always found in lichen planus, while shiny papules are often found in eczema and other diseases. I think there is often a tendency to base a diagnosis of lichen planus on these shiny papules which we see in other diseases. In this case the lesions were on the extensor surface of the arms, while the flexor surfaces, where lichen planus is commonly found, were absolutely free. It seemed to me the eruption was an unusually flattened nevus linearis.

Dr. Harry R. Foerster: I, too, was struck by the similarity of some of these lesions to porokeratosis, although I did not venture that diagnosis. I thought of the condition as a nevus linearis, with atrophy as an unusual feature.

Dr. Gilchrist: I do not think that there is any evidence at all of porokeratosis, but it is more that of lichen planus.

A Case for Diagnosis, Sarcoid (?). Presented by Dr. Simpson and Dr. Anderson.

A white boy, aged 4 months, at birth presented three small, macular lesions on the face. At the age of 1 month, macules were observed on the back of the neck and left thigh, all increasing rapidly in size. The child was first seen at 3 months of age, and there had been no change in the lesions during the past month. There were five nodular lesions situated on the right side of the face, one on the back of the neck and over the left hip. They were cutaneous and subcutaneous, waxy and purplish red, and on diascopic pressure left yellowish white areas the size of the head of a match. They were circumscribed and freely movable over the underlying structures.

An intradermal tuberculin test was negative. The blood Wassermann and Kahn reactions were negative, as was a provocative Wassermann test. The mother's Wassermann reaction was reported 3 plus on April 12 (very likely an error) and was negative to the Kahn test on May 2, 1927. Results of the examination of the blood otherwise were negative. Wounds from three biopsies healed quickly. A biopsy from the last lesion on the hip showed a diffuse infiltration of the entire corium with epithelioid tissue; a few round cells with giant cells scattered throughout, both of the Langhans and multinucleated types. No plasma cells were found, and no sharply circumscribed masses of epithelioid cells. The only treatment had been arsenic in small doses. No change was noticed in the condition.

DISCUSSION

Dr. Wile: I did not think the tumors in this case were those of sarcoid of any of the known or accepted types. I think there is no clinical resemblance to sarcoid and no microscopic resemblance to that disease. The tumors stood out from the skin much more strikingly than sarcoid lesions would. They were extremely hard and dense, and under the microscope were tumors of connective tissue resembling closely fibrosarcoma. I think the question of whether it is malignant or benign will depend on the outcome, but the lesions to me were those of fibroma or fibrosarcoma.

Dr. Highman: I never heard of an instance, though this may be the first one on record, of an infant being born with sarcoid of any type. The appearance of the case, as Dr. Wile said, was perhaps remotely suggestive of that disease. The consistency of the lesions, however, was much against it. There

is little to add to Dr. Wile's remarks regarding the histologic appearance. It is either a fibroblastoma or a young spindle cell sarcoma; I fancy rather a fibroblastoma, a nevus in other words. How anything in the section could be interpreted as round cells or epithelioid cells is beyond me.

Dr. Weidman: Perhaps one of the factors leading to the diagnosis of sarcoid was the presence of giant cells, which were conspicuous. Giant cells are players to the grandstand, always attracting attention, but not to be depended on; they point only in certain directions. They are seen in a variety of tumors besides in granulomas. I agree with Dr. Wile, but wish to add the comment about the giant cells.

Urticaria Pigmentosa. Presented by Dr. Robinson.

A girl, aged 21 months, had symptoms of a variable degree of itching, intermittent in character. She was breast fed until the age of 1 year, and the administration of orange juice was begun at the age of 4 months. The eruption was of eighteen months' duration, generalized, and there was no history of any skin disease in any member of the family. There were numerous pink to reddish and reddish-brown, partially defined lesions, some of which were macular and other hivelike in character, varying in size from 2 mm. to 1.5 cm. in diameter. Laboratory procedures had not been attempted.

Ichthyosis. Presented by Dr. Robinson.

Three brothers, aged 6, 8 and 10, presented the typical observations of this disorder. One showed a marked pigmented nevus (hystrix).

Tumors (Lymphoid) of the Neck. Presented by Dr. Ketron.

An Irish woman, aged 65, stated that a large lump had appeared on the neck six or seven years before presentation, and that smaller ones had been noticed during the past three years. There had been no subjective symptoms. On the left side of the neck, just below the lobe of the ear, was a reddish, triangular nodule, about the size of an English walnut. It was confluent with the skin but movable on the underlying tissues; it was rather firm and showed some capillaries running over its surface. Near this lesion were three or four small ones of a similar character, and over the postauricular area the skin showed a diffuse infiltration, and had a pinkish, translucent appearance. Several other pea or smaller sized nodules could be felt under the skin on the left side of the face. None of the glands were definitely enlarged. Within the past ten days, a nodule had appeared under the right ear.

The patient was kept in the hospital from January 5 to February 24 of this year, but nothing definite was found in the various examinations conducted at that time. Part of the time the patient had a slight rise in temperature and some vomiting spells. She also developed an eczematous eruption of the arms and legs during this time. Numerous examinations of the blood showed nothing of importance, and roentgen-ray examination was negative. One of the small nodules and the large one were excised, but the large one had recurred. The microscopic changes in the small tumor showed numerous islands of apparently lymphoid tissue scattered around in the cutis. The larger tumor consisted of a dense, cellular mass, most of which appeared to be small lymphocytes, although there were nests of larger cells. The patient had received several roentgen-ray treatments, which had brought about a temporary decrease in the size of the nodules.

No one had been able to make a definite diagnosis. Lymphosarcoma, benign lymphoma, aleukemic-leukemia, chronic lymphomas and mycosis fungoides had been considered.

DISCUSSION

DR. MITCHELL: I have a patient with a lesion under the left ear which resembles these lesions clinically. The physician who referred the patient thought it best to avoid a biopsy or surgery if possible. The patient has responded to filtered roentgenotherapy in apparently much the same way that the patient presented did. I am not sure what the lesion is in my case or what they are in this case.

DR. KETRON: The sections have been seen by several men in the hospital, including Dr. Bloodgood and Dr. MacCallum, and they would not make a definite diagnosis.

PEMPHIGUS FOLIACEUS (APPARENT RECOVERY). Presented by DRS. GILCHRIST, PELS and HEMMETER.

A man, aged 48, a native of Galicia, had lived in the United States for thirty years. The case was reported in full by Dr. H. H. Hazen, *(J. Cutan. Dis.* **28**:118, 1910), who stated that the entire surface of the body and face were affected, excepting the palms and soles. The lesions were thin, white and gray, scaly and scabby, with some papules arranged in striae in the axillae and groins. Flaccid vesicles later appeared as crops with rise in temperature, 100 to 101 F., and were easily rubbed off. The skin had a sickly odor. There was no grouping of lesions, and some were constantly present.

The onset was twenty-one years before presentation, the first lesions appearing on the back as small blisters, accompanied by considerable itching, and gradually spreading over the entire body. The patient was always much constipated, the bowels moving once in two or three days, and the stools were bloody. He had consulted at least fifteen physicians between 1906 and 1922, when he came under the care of Dr. Hemmeter of Baltimore. The condition did not vary much except for constant, temporary improvement from continuous water baths. He became worse when on a general diet and was most comfortable on a diet of crackers and milk. He said that he noticed an occasional vesicle.

The blood Wassermann reaction was negative; leukocytosis was as high as 16,000, and the blood contained 5.8 per cent of eosinophils. Metabolism studies were made with a Folin diet; urinalysis revealed: nitrogen content low, ammonia high, ethereal sulphates increased. The stools at this time were normal. A pure growth of *Bacillus pyocyaneus* was obtained from unruptured vesicles and from the urine; *Staphylococcus aureus* was obtained from some vesicles. Biopsy showed that the horny layer was lacking, that the rete was thinned and edematous and that there was polymorphonuclear infiltration. The papillae were elongated, with edematous fragmentation. The corium showed epithelioid and small round cells around the blood vessels, the walls of which were not thickened. There was infiltration of white blood corpuscles and of plasma cells around the sweat ducts in the rete. There was much edema near the hair follicles. The patient had been treated by the usual gastrointestinal procedures, including "S I series."

In the treatment continuous baths had proved helpful; autogenous vaccines, from 10 to 100 millions, made him worse; a restricted diet caused no lasting improvement. One transfusion of whole blood, fifteen years before presentation gave temporary improvement. Five years previously, he was advised to

take a strictly nonprotein diet, and lavage of the colon with tannic acid 0.4 Gm. in a quart of warm water, plus two heaping teaspoonfuls of aluminum silicate, every other day. Later sulphonated bitumen, N. F., was used in the irrigation. This brought about almost immediate improvement. The patient was at present taking a plain colonic irrigation once a week. Internally he had received strychnine sulphate and cacodylate of iron, or 0.01 Gm. of cacodylate of iron, 0.1 Gm. sodium glycerophosphate and 132 mg. of sodium cacodylate. The patient had been practically well for nearly three years.

DISCUSSION

Dr. Gilchrist: This is a remarkable case which was reported in detail by Dr. Hazen some years ago. The man came to Baltimore, and Dr. Hazen kept him in a continuous daily bath for weeks at a time. The lesions disappeared from his body. When he had a recurrence of the lesions, he would return to the continuous bath. Dr. Hemmeter found involvement of the bowel and began high irrigations, and the man has been cured for three years. For twenty years the patient had had a universal recurrent bullous eruption of a foliaceus type of pemphigus.

Dr. Pusey: I wish to refer again to a patient of mine who had pemphigus foliaceus about twenty years ago. The patient was seen by most of the dermatologists in Chicago at that time. There was no question about the diagnosis; the picture was typical, and that man recovered spontaneously. I do not know his later history.

Dr. Howard Fox: This shows that an eruption which appears to be a classic pemphigus may disappear. The patient happened to hear my name spoken and said that he was in the Skin and Cancer Hospital twelve years ago and "saw Dr. Fox and his son" and that we made a diagnosis at that time of pemphigus, as Dr. Hazen did later. The man made an astonishing recovery.

Scleroderatitus Epithelioma. Presented by Dr. Strobel.

A man, aged 59, had a sclerodermatous area on the right cheek, with an epithelioma, which was said to have first been noticed in 1908. It had once healed under roentgenotherapy but broke down again, following which he received extensive treatment with the roentgen ray and radium. The upper eyelid was contracted, but he still had vision in the eye. Biopsy showed an epitheliomatous tissue.

Neurosyphilid. Presented by Dr. F. J. Eichenlaub.

A male patient presented several annular, macular, nonscaly, pink lesions on the trunk. His history indicated that he did not recall any venereal infection. He served in the regular army for many years and twice served in the Philippines. A diagnosis of cerebrospinal syphilis was first made Jan. 29, 1920. There had been numerous positive tests of the blood and the first spinal fluid taken in 1920 showed a Wassermann reaction of 4 plus with 0.5 cc. of spinal fluid and also with 0.1 cc. The colloidal gold reaction was 555552100, with an increased cell count and increased globulin. There had been several positive spinal fluids since then.

The heart and lungs were normal. The reflexes were exaggerated, especially the knee jerks and plantar reflexes. The Romberg reaction was slightly positive. There was a slight tremor of the hands and tongue. The eyes showed a nystagmus when looking to the left; asymmetry of the pupils, the left more than the right. The light reflex was normal. Distinct hypesthesia

in the extremities was present and anesthesia in the forefinger and thumb of the left hand. In addition, there seemed to be some disturbed sensation over the areas involved in the cutaneous lesions.

Biopsy report as given by Dr. Prince was as follows: "Section of skin has the appearance of being edematous, particularly the layer immediately below the epiderm. Here the fibrous elements approach hyaline transformation. Scattered through the subepidermal layer is a diffuse round cell infiltration, the principal cell being a very small lymphoid. Nowhere does it seem to be actually in contact with the epiderm. Surrounding the hair follicles, coil glands, and sebaceous glands, the round cell infiltration is particularly noticeable. This is also true of the perivascular lymphatics in general. Scattered throughout are many giant cells of the Langhans type, the cytoplasm of which seems to be rather degenerated. Large epithelioid cells are few in number and are more numerous on the outer layer of the skin. Diagnosis: Dermal syphilis."

NOTE.—Since presentation the patient had had several nasal smears and the skin section examined for acid-fast bacilli. The results of these have been negative.

DISCUSSION

DR. HOWARD FOX: I do not agree with the diagnosis of neurosyphilid as presented, but consider this case to be one of maculo-anesthetic leprosy, i. e., a neuroleprid. The Wassermann test was positive, which might be due to leprosy, and the patient gave no history of syphilis. There was a well marked enlargement, in my opinion, of one of the ulnar nerves, and the patches were unquestionably somewhat anesthetic. Furthermore the patient stated that he had lived a number of years in the Philippines.

At first sight these red circinate macules might well be taken for the condition called by Unna "neurosyphilide." This was designated annular macular syphilid in the classification of the syphilids devised by my father and officially adopted by this Association. These cases appear to be extremely rare in this country at least, most of them having been reported by Danish and English observers. I had an opportunity to report the first case in the United States, presenting the subject at one of our annual meetings. My patient, like most of those previously observed, was a woman. The lesions, which are often persistent, and which do not respond well to treatment, are frequently ill defined and readily escape notice. They are to be sharply distinguished from the annular papular syphilid with elevated solid borders, the type of eruption so frequently seen in the negro.

DR. GOLDENBERG: I also made a diagnosis of leprosy and wish to add that the ulnar nerve is palpable and painful.

DR. STOKES: I think the facies were even more characteristic than any of the other things. The ulnar nerve was manifestly enlarged, and there was change in sensation in the one plaque.

DR. MORROW: I agree with the gentlemen who made a diagnosis of leprosy, and I think the case is an example of the maculo-anesthetic type. The suggestion of Dr. Stokes that the man had the characteristic facies I think is an important point. The patient had the typical facies, the one ulnar nerve was enlarged, and there is no question but that there was a change in sensation in one of the macular areas, and this is enough to make the diagnosis.

DR. LANE: I agree with the diagnosis. I should like to know what technic was used in the Wassermann reaction. With the Kolmer technic the positive reactions in leprosy are far less numerous than with other methods.

ADENOMA SEBACEUM. Presented by DR. KETRON.

A girl, aged 11, had typical lesions of this disease over the face. The Binet-Simon test showed that she had a mentality of a child 6 years of age.

ULCERS (FACTITIOUS). Presented by DR. PELS and DR. PEREGRINE WROTH, JR.

A white seamstress, aged 47, had ulcers of the same character on the right hand, arm and abdomen. They were well defined, deep, irregularly round, with the edges sloping inward, not rolled, merging into sloughing, necrotic granulations. There was a brownish and yellowish tenacious exudate, which was sometimes black in the center of the lesions. The surface was irregular, varying in depth, with crusting over the smaller ulcers. The surrounding tissues were swollen and showed a fairly deep erythema extending about 2 cm. On palpation there was considerable edema, induration and tenderness. The right index finger had been amputated, and there was restricted motion at the wrist. The patient was a large woman, suggesting gigantism, and was left handed.

She was first seen four years before presentation, the first lesion having appeared five and one-half years ago following a cut on the index finger, accidentally (?), in contact with lye which was used in making soap. The resulting sore increased in size; the finger became stiff and was amputated. Eight months later two more lesions appeared, with others appearing at various intervals, some in the scars of previous lesions. Recently, following the removal of skin from the abdomen for grafting purposes the same type of ulcers appeared there. The patient lived alone and had not followed her occupation recently because of invalidism.

The blood Wassermann reaction was negative on repeated examinations. Fungi had not been found. Biopsy showed granuloma and suggested leprosy to one observer. Anaerobic cultures gave no growths.

The treatment had been almost entirely surgical, the areas being excised by cautery, and healing was usually prompt. Three doses of neoarsphenamine at weekly intervals gave no effect other than enlargement of the posterior cervical glands. Bland ointments had been prescribed. Neurologic examination had not been made, and the social aspects had not been completely studied. Recently, while she was a patient in the hospital, her room had been searched for any possible caustic agent, and a small vial of "hydroxide" was found. With this the same type of ulcers were produced on the skin of a guinea-pig.

ADENOMA SEBACEUM ACNE. Presented by DR. PELS.

A woman, aged 20, had an eruption of ten years' duration, which had gradually spread, involving the nose, cheeks, lips and chin. Some of the lesions had been as large as 4 mm. in diameter. They were discrete and confluent tumors, globular, flat, waxy and shiny, varying from brown to deep pink. There was no similar condition in the family (four sisters and three brothers). The acne was influenced by bromides, which were given because of epileptic seizures dating from her second year. She was definitely impaired mentally. The blood Wassermann reaction was negative. Biopsy from a lesion on the cheek showed hypertrophy and hyperplasia of the sebaceous glands; the corium was avascular, edematous, and the collagen fibers were proliferating.

She had not received treatment previous to electrodesiccation, unipolar method, low voltage, during the past ten months, with calamine lotion to relieve the postoperative irritation. The treatment for epilepsy had been discontinued. She was presented to demonstrate the results of treatment: destruction of tumors by numerous but short sessions of electrodesiccation.

A Case for Diagnosis. Presented by Dr. Gilchrist.

A physician, aged 50, eighteen months previous to presentation first noticed three dime-sized, somewhat moist, and slightly scabby lesions, well defined, two in one axilla and one in the other. They then began to spread slowly onto the chest, preceded by slight itching. When presented, the lesions were numerous on the scalp, face, chest and back, varying from the size of a pea to that of a dime and well defined. Many of them were covered with a thin, yellowish scab; others were in various stages of evolution. They did not increase in size after their appearance, and when first seen looked like rumpled skin, the horny layer being just visibly loosened. After the patient rubbed them, a yellowish, thin scale formed, under which was a reddened, slightly moistened base.

Under applications of calamine lotion and mild salicylic acid ointment they slowly disappeared. They did not improve under treatment with sulphur ointment. Sections were presented of a primary lesion, showing separations of the upper and middle layers of epidermis with serous exudation and a few mononuclear cells.

DISCUSSION

Dr. Ormsby: Several of the members thought that this patient had lesions on the chest of the same type that we have shown on several occasions in Chicago as atypical pemphigus. That is true so far as the lesions on the chest are concerned. This group of patients present a syndrome which is a little different from any other. They have lesions on the face like lupus erythematosus, seborrheic-like lesions on the trunk with marked crusting and also bullae. The case of the first patient we saw was reported in 1919; I have seen him within the last few weeks and he is in good condition. The lesions on the face have all cleared but the seborrheic-like crusts and bullae continue to develop on the chest, abdomen and back. The present case may be an example of atypical pemphigus, but if so, it is the first one I have seen in which there were not the lupus erythematosus-like lesions on the face.

Dr. Wise: I agree with the diagnosis of benign pemphigus in this case. Dr. Senear described such cases in the Archives of Dermatology two or three years ago. Several analogous cases were shown in New York; the patient in one was treated for two years for impetigo, and another for seborrheic dermatitis, for three years. They all had greasy, stuck-on scales, and some of these scales dropped off, leaving raw surfaces. Occasionally there were small bullae. The patient shown today had lesions on the face at one time, which corresponded to those Dr. Ormsby described and which ultimately disappeared. I think there is no doubt that there is an extremely benign type of pemphigus which does not end fatally, and which progresses insidiously.

Dr. Goldenberg: I take issue with the term "benign pemphigus." This case may be pemphigus of a lupus erythematosus type, but I wish to call your attention to the fact that one of the patients with so-called pemphigus benignus described by Dr. Williams a few years ago died. In my opinion, pemphigus is not benign.

Dr. Gilchrist: I showed a similar case before the New York Dermatological Society fifteen years ago. One has to find the primary lesion of the skin. In this case the primary lesion was hardly visible; one could detect it only by a wrinkling of normal skin which, on being rubbed, cause separation of superficial layers of epidermis. There is a little itching, the patient rubs the skin, and there is a rubbing off of the superficial layers of epidermis, without any leukocytic infiltration. Microscopic section shows separation in the middle

of epidermis, and exudation of serum. There is little change in the corium except in the sweat glands, which are dilated and are surrounded by more than a normal number of lymphoid cells. I applied a half strength radium plaque for five minutes on the lesions on the face, and they disappeared. Afterward I tried it on the scalp and on the four lesions on the chest, and these lesions also disappeared. If the patient lets a lesion alone, a clear flaccid blister will form. I doubt whether it is a benign pemphigus. The patient is in good condition and has no lesions in the mouth. If it eventuates in pemphigus, I will let you know.

A Case for Diagnosis. Presented by Dr. Pels.

An American girl, aged 16, had had scabies for nine months and presented a fading eruption of that disorder. In addition, there was a widespread eruption, chiefly scarring, on the face and scalp, beneath the chin and on the neck, portions of the trunk and buttocks, elbows and forearms, entire legs, knees and ankles. The primary lesions were papules or nodules, which were discrete and grouped, irregular in shape, varying in size up to several centimeters in diameter, dome-like, honeycombed, purplish red, and becoming crusted. On palpation a creamy pus exuded. The lesions were rather deeply set, painful on pressure and freely movable over the deeper structures. The scars were numerous, deeply set, depressed, many pigmented, but some remaining clear of pigment in the center. Many had a crinkled surface. The largest scar was on the anterior surface of the left leg.

Physical examination showed that the patient was underdeveloped, had lost weight, had moderately enlarged tonsils, pronounced splenomegaly, general glandular enlargement, loss of abdominal reflexes and albuminuria. The eruption had been present for nine years, first appearing as indurated nodules on the buttocks, which ulcerated with purulent discharge and healed. Later an ulcer developed on the heel following a splinter wound. Five years before presentation, ulcers appeared about the ankles, then on the legs and over the entire body. This was accompanied by fever, prostration and bloody stools, and the patient was hospitalized for seven weeks. At the time of presentation, she was having an exacerbation and had been in Johns Hopkins Hospital for two weeks. Her father was said to have tuberculosis.

Examination of the blood showed that the Wassermann reaction was negative; the blood chemistry and differential count were normal. The stools were normal. Roentgen-ray examination of the chest showed the lungs clear, the heart and aorta normal. Inoculation of guinea-pigs with tissue was unsatisfactory (the animal died of extraneous infection). Biopsy of a lesion from the right foot showed hypertrophy, acanthosis and edema of the rete, edema of the papillae and corium. There was dilatation of the blood and lymph vessels and massive infiltration containing many plasma cells and some eosinophils. Special growths had not been obtained on culture.

The patient had received six injections of neoarsphenamine, which made the condition worse. Numerous irradiations with ultraviolet light had been given and two roentgen-ray exposures to the hands. Internally she had received cod liver oil, syrup iodide of iron, solution of potassium arsenite, ovoferrin, elixir of iron, quinine and strychnine.

Lupus Erythematosus, (Healed). Presented by Dr. Gilchrist.

A man, aged 37, was presented because he showed two large superficial scars on the right side of his face about 5 by 5 cm. in size, and scars of two lesions of lupus erythematosus which were healed by radiumtherapy and which had remained healed for over six years.

LUPUS ERYTHEMATOSUS. Presented by DR. KETRON.

A boy, aged 8, had a condition of two years' duration, which started as a small spot on the left cheek, and which had now practically disappeared. When presented he showed several dime-sized or larger patches on the backs of his hands and fingers. They were reddish, slightly raised, and showed numerous small, blackish, keratotic plugs. The lips showed considerable scaling, and there was increased redness and the formation of thin, white lines on the mucous membrane of the lips. The tongue and buccal mucous membrane also showed numerous small, pinhead-sized, roundish or irregularly shaped ulcers, which at times disappeared. Physical examination did not reveal any evidence of tuberculosis. The tonsils had been removed several months before presentation, without any definite influence on the disease.

The patient was presented because of his age and because an opinion was desired as to whether the ulcers in the mouth should be considered a manifestation of the lupus erythematosus.

A CASE FOR DIAGNOSIS. Presented by DR. GILCHRIST.

A negro, aged 52, had a maculopapular eruption over most of the body, including the extremities and face, and appearing on the chest as nonindurated, pigmented striae. The lesions over the body were made up of soft, velvety papules, from 2 to 3 mm. in diameter; they were extremely numerous and practically formed a continuous eruption over the entire body. The general appearance was that of a widespread lichenification. The lesions on the arm and leg were scaly and more indurated than the others and presented a rather scaly eczematous appearance. The natural markings of the skin were exaggerated. There was no evidence of papules about the hair follicles on the backs of the fingers. A definite history could not be obtained concerning the time of its appearance. Although the patient thought that he had had this for years, his general health was good and all functions were regular. The Wassermann reaction was negative.

The general appearance of the eruption was somewhat similar to that of an old chronic lichen planus which is disappearing. There was also a lesion in the mouth and on the buccal mucous membrane, but these were not distinctive. Pityriasis rubra pilaris was considered as a diagnosis, but was later ruled out. There had not been time to obtain sections for study.

DISCUSSION

DR. SCHAMBERG: I think we all feel hesitant about expressing an opinion in regard to this case. There was marked pigmentation and a high degree of lichenification and in certain areas slightly elevated plaques of deeper pigment. I would not venture a definite diagnosis, but think it possible that the patient may later show evidences of mycosis fungoides. There was a certain amount of circumscription of the involved areas, and along the chest and elsewhere he showed distinctly thickened, circumscribed patches.

DR. HOWARD FOX: A point against the diagnosis of mycosis fungoides in this case is that it is extremely rare in the colored race.

DR. SWEITZER: I thought the condition was parapsoriasis. If one saw the lesions in the folds of the elbow alone, I think there would be no hesitation in making this diagnosis.

DR. WILLIAMS: I wish to second the diagnosis of parapsoriasis. The fact that there is a good deal of pigmentation is explicable, for any inflammatory condition in the negro is apt to produce hyperpigmentation at the periphery of the lesions.

DERMATOSIS, BOWEN'S DISEASE, PRECANCEROUS. Presented by DR. GILCHRIST.

A man, aged 50, had a disorder of fifteen years' duration. It began as a single lesion on the chest, which was flat, dry, well defined, and somewhat keratotic. Gradually other lesions appeared, in all stages of development. At the time of presentation he had many lesions of various sizes, from about 2 to 4 cm. in diameter, covering the upper half of the back and chest and on the backs of the hands and forearms. Most of the lesions were typical of Bowen's disease. Roentgen-ray treatments had been tried on some lesions and radiumtherapy on others, with the result that marked telangiectasis followed.

DISCUSSION

DR. GILCHRIST: I would be glad to have any one offer a suggestion for the treatment of this patient. A number of the lesions have been treated by radiotherapy, and this has left marked telangiectasis.

DR. HIGHMAN: I did not see why the lesions should not be let alone until some particular one becomes active and then destroyed with fulguration.

PROFESSOR PAUTRIER: I never get results in such cases with radiotherapy.

DR. MORROW: I think surgical intervention is out of the question on account of the number of lesions. We have had a number of such cases and I think almost any form of destruction can be used on the individual lesions. We ordinarily use a cautery. Trichloracetic acid will do it, but it leaves a large scar which is not necessary. In the majority of cases, we use the cautery with local anesthesia; sometimes we use it with general anesthesia.

DR. KING-SMITH: I had a case that was similar to this one. The patient was seen by Dr. Schamberg and also by Dr. Fordyce, who believed it to be psoriasis. Our best results were obtained with the cautery and trichloracetic acid.

DR. PUSEY: I have had several of these cases, which I prefer to call multiple epitheliomatosis. I do not see anything peculiar about them except their multiplicity. We have destroyed these individual lesions in various ways. My experience is that they are fairly susceptible to roentgen-ray treatment, and that the individual lesions can be well handled with it. That means a telangiectasis, but what does that matter if we cure the epithelioma? One patient whom Dr. Senear must remember had a great many of these lesions, one of which involved the nipple. When they have become as large as a coin we have had some difficulty in treating them with the roentgen ray, but we have managed it. I think instead of waiting for them to become large and active the proper course is to destroy them while they are small. We have not had recurrences of lesions in the old areas.

DR. HOWARD FOX: Many methods of treatment could be used to advantage, including Bucke's so-called "Grenz rays" which are supposed to be midway between ultraviolet and roentgen rays. I have seen a most beautiful result in an extensive case of multiple epithelioma of superficial type from treatment with this new method.

DR. LANE: I think there must be a great deal of difference in the way these lesions respond to treatment in different patients. I have had one patient under treatment for ten or twelve years and have had about the same results Dr. Gilchrist reports. I have had to use large doses of roentgen ray to get any results. I have tried trichloracetic acid, but after this the healing was slow. I have finally resorted to letting the lesions alone, except

that I keep them thoroughly greased until they become troublesome, when I have several of them excised at one time under procaine anesthesia.

DR. GUY: I confess to considerable confusion regarding Bowen's precancerous dermatosis. Nearly every clinical presentation contains one or more cases such as this one, which microscopically prove to be keratoses and basocellular carcinomas. Histologically, the epidermis in Bowen's disease is dyskeratotic with a granuloma in the dermis, and that is lacking in this case. Bowen's original description compared favorably with early Paget's disease histologically. I think it would be well to avoid the term Bowen's precancerous dermatosis unless it is associated with the typical microscopic changes which are found in that condition.

ST. LOUIS DERMATOLOGICAL SOCIETY

Regular Meeting, April, 1927

R. H. DAVIS, M.D., *in the Chair*

TRANSITORY BENIGN PLAQUES OF THE TONGUE. Presented by DR. CONRAD.

A man, aged 42, a painter, gave a history of having had a chancre in 1927. The Wassermann reaction had been negative since the first course of treatment. The last Wassermann test was made on April 4, 1927.

The present condition started in July, 1926, as a small denuded area one-half inch (1.27 cm.) in diameter on the left side of the tongue, which cleared up after ten days under local treatment, returning about two weeks later at the same site, on the tip of the tongue, and at various other sites on the left side of the tongue. Occasionally it was noted on the right side. The condition continued to be active over various periods of time, clearing up without any treatment and then reappearing.

Examination of the patient at presentation showed a roughened area about 1 inch (2.5 cm.) in length and one-quarter inch (0.63 cm.) in diameter on the left side of the tongue, about 2 inches (5 cm.) from the tip. The edges were slightly raised, well defined and irregular. The upper part of the lesion showed some changes in the tissue, being somewhat roughened and beefy red. It spread peripherally.

DISCUSSION

DR. CONRAD: I would like to ask the members of this Society for suggestions with regard to the treatment of such a condition.

DR. MOOK: There is no treatment for "geographic tongue." The condition will get well of itself, regardless of treatment.

A CASE FOR DIAGNOSIS. Presented by DR. CONRAD.

A man, aged 22, engaged in clerical work, gave a negative past history. The present condition began in June, 1925, persisting for four months. There was no pigmentation. In April, 1926, it recurred, and has been present to date. At presentation two areas on the lower part of the abdomen and upper part of the thigh were observed. The lesion was bilateral. The areas on the lower part of the abdomen showed a dark pigmentation about 3 inches (7.6 cm.) in diameter. These were made up of many dark pigmented papules, the

majority of which were discrete, though some of them had coalesced and formed patches. There were some scattered lesions on the buttocks. The newer lesions did not show pigmentation. There was some pruritus at times.

DISCUSSION

DR. WEISS: It appears that there is some atrophy in the lesions, but there is no grouping. There are one or two fresh lesions similar to the original ones. Several years ago, Dr. Wise of New York described a phenolphthalein eruption that was similar to the eruption in this case. There is a history in this case of taking phenolphthalein for the past two years at regular intervals. This might be an atypical case of phenolphthalein eruption.

DR. MOOK: The presence of atrophy in the lesions would eliminate a diagnosis of phenolphthalein eruption.

DR. CONRAD: I thought this might be a case of urticaria pigmentosa because of atrophy and grouping. A biopsy would aid in the diagnosis.

A CASE FOR DIAGNOSIS. Presented by DR. DAVIS.

M. B., aged 22, had been married for three years. Her general health had been fairly good during that time. There was no history of pregnancy or miscarriage. She underwent an appendectomy three years before presentation, and a tonsillectomy six months before after having been advised that the tonsils had caused a general toxemia. She gained 10 pounds (4.5 Kg.) following the tonsillectomy. The patient does not sleep well; her appetite is poor; she collapses easily; the bowels are constipated. Ten months previously she noticed a mottled pigmentation on the anterior surface of the left leg near the ankle which spread to both legs. At presentation the condition was definitely worse on the left leg. There was some pain on pressure on the left shin. The Wassermann reaction was negative. The condition resembled erythema ab igne, although there was no history of exposure. The tentative diagnosis was erythema perstans, not of the erythema multiforme type, but rather of the persistent hyperemic type.

DISCUSSION

DR. WEISS: I would consider erythema ab igne, although there is no history of the "toasting of the legs."

DR. DAVIS: In my opinion it is a case of erythema perstans associated with heart disease and its complications.

LIVEDO RETICULARIS. Presented by DR. COLEMAN. (From the Washington University Clinic, service of Drs. Engman and Mook.)

G. B., aged 12, entered the Washington University Clinic on March 25, with a history of an eruption on the legs and body of two weeks' duration. Examination showed imbricated scaly plaques on the trunk and extremities. A few lesions were also present on the elbows and knees. On both lower extremities were shown most markedly reticulated areas of bluish-red erythema. The lesions faded on pressure.

DISCUSSION

DR. MOOK: I thought it a case of livedo reticularis associated with some circulatory disturbance of the heart and capillaries with passive hyperemia.

HYPERTROPHIC LUPUS VALGARIS. Presented by DR. MOOK. (From the Washington University Dispensary.)

A colored man, aged 33, had had an eruption on both sides of the neck for the past eleven years, consisting of circular and circinate groups, of a hypertrophic, built-up, granulomatous process, with numerous scars of old lesions.

HERPES ZOSTER (INVOLVING THE RIGHT BUTTOCK AND GENITALS). Presented by DR. STRYKER.

J. S., aged 3 years, had an attack of herpes zoster involving the right buttock and genitals. Pain preceded the eruption.

DISCUSSION

DR. STRYKER: I feel this case to be of distinct interest because of the distribution of the herpes zoster. The clinical course has been typical.

DR. WEISS: I saw a case of herpes zoster a few days ago in a patient who developed chickenpox three days following the onset of the eruption. I am certain that it was a case of universal herpes. This is interesting in view of the fact that some physicians believe that the etiology of both conditions is similar.

A CASE FOR DIAGNOSIS. Presented by DR. STRYKER.

M. B., aged 25, a telephone operator, presented lesions which had their onset four years previously. They were located on the dorsal surfaces of the joints of the fingers and the elbows. On the flexure surface of the right wrist and extending up the forearm was a chain of small lesions, flat, slightly scaly, purple, some having a polyhedral border. There was moderate infiltration. Subjective symptoms were lacking at the time of the onset. These lesions apparently had developed at the site of trauma. No lesions were found in the mouth with the exception of one lesion which was barely suggestive.

DISCUSSION

DR. STRYKER: The question of lichen planus was raised and must be seriously considered, although the distribution and duration of the lesions are atypical.

DR. MOOK: The distribution with scarring and atrophy point to lupus erythematosus, although the distribution is a bit unusual, being asymmetrical.

DR. DAVIS: The lesions impress me as indicating an early case of scleroderma.

DR. GRINDON: A few days ago the lesions were papular, shiny, and angular like those of lichen planus.

SCLERODERMA. Presented by DR. SEALE. (From the Barnard Free Skin and Cancer Hospital, service of Drs. Engman and Mook.)

A. R., a woman, white, aged 28, undernourished and undeveloped, had a small ulceration on the tips of the fingers two years before presentation accompanied by stiffness. Later ulcerations also appeared with the accompanying stiffness on the knuckles. This condition progressed, involving the forearms, the side and front of the neck and the upper eyelids. The skin at these

sites was thickened, boardlike, tense and slightly scaly, and varied from a whitish to a pinkish color. The hands were clawlike. Small ulcerations of atrophic character were located on the knuckles and tips of the fingers.

DISCUSSION

All present concurred in the diagnosis of scleroderma.

A Case for Diagnosis. Presented by Dr. Lane. (From the Barnard Free Skin and Cancer Hospital, service of Drs. Engman and Mook.)

J. F., a man, white, aged 52, had a shallow, tender ulceration about the size of a silver dollar of two and a half months' duration, on the right half of the hard palate, on the floor of which were numerous bright red, papillomatous projections, giving the appearance of granulations. Over this there was yellowish-green, purulent matter. The border was slightly raised and showed little induration. On the dorsal surface of the third metacarpal phalangeal joint on the left hand was a lesion the size of an almond, of four months' duration. It was verrucous, hard and dark gray. There was a similar smaller lesion on the ventral surface of the same finger, of two years' duration. The Wassermann reaction was three plus in cholesterin antigen. Microscopic diagnosis of a section from the mouth was chronic inflammation; syphilis was suspected. The physical examination and roentgenograms of the chest were suggestive of tuberculosis. An examination of the sputum, however, was negative. Three weeks of antisyphilitic treatment revealed no improvement in the condition.

DISCUSSION

Dr. Mook: This appears to be a case of tuberculosis verrucosa cutis. The lesion on the hard palate is suggestive. This case reminds me of a similar one at Barnard Hospital several years ago in which the entire cheek was involved, which was diagnosed as carcinoma, this diagnosis having been verified later by laboratory examinations. Fifteen years later, the lesion recurred and the patient was seen by Vilray P. Blair who made smears and found tubercle bacilli. The patient was ultimately cured with radium.

Dr. Davis: The pathology in these cases is frequently misleading. . . . Dr. Burrows saw the slide and made a diagnosis of syphilis. In discussing the symptoms with him, he said that it was impossible to make a positive diagnosis of tuberculosis from a section.

Lymphangioma Circumscriptum. Presented by Dr. Seale. (From the Barnard Free Skin and Cancer Hospital, service of Drs. Engman and Mook.)

M. J. J., a girl, white, aged 6, had small, grouped, superficial and deep-seated vesicle-like lesions on the anterior surface of the neck, upper eyelid, and along the nasolabial cleft, which had increased slowly since birth. The majority of the lesions were clear; others were blood-tinged. Small blood vessels coursed over the surface of a few of the lesions. On incision, clear lymphlike fluid exuded. Deep swelling was noted around the eyelid.

DISCUSSION

Dr. Tobias: This is a case of lymphangioma. There are several vascular patches at the periphery. I believe the condition would be benefited by radium in plaques.

EPIDERMOLYSIS BULLOSA AND LICHEN PLANUS. Presented by DR. SEALE. (From the Barnard Free Skin and Cancer Hospital, service of Drs. Engman and Mook.)

This case, occurring in a colored girl, aged 13, was reported by Drs. Brown and Calhoun, in the ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY. At presentation before this Society, the patient showed a profuse lichen planus of two months' duration in addition to the epidermolysis bullosa.

DISCUSSION

All present concurred in the diagnosis.

XERODERMA PIGMENTOSUM. Presented by DR. SEALE. (From the Barnard Free Skin and Cancer Hospital, service of Drs. Engman and Mook.)

A brother and sister, aged 22 and 16, respectively, had been presented in 1914 before the thirty-eighth meeting of the American Dermatological Association in Chicago. Since that time the disease has progressed in both patients, the boy having lost his nose as the result of carcinoma, and having had numerous other lesions treated with radium, roentgen rays, and surgical intervention.

At presentation the girl showed a well developed condition on the face, neck, shoulders, arms and legs. There were several small epitheliomas on the dorsal aspect of the hands. A part of the right ala of the nose was destroyed following treatment for carcinoma in her home with "cancer paste."

A CASE FOR DIAGNOSIS. Presented by DR. WEISS. (From Dr. Engman's Clinic at Washington University Dispensary.)

A colored woman, aged 41, presented an eruption of seven years' duration on the face, which she had been treating for five years with Cuticura soap and salve. The eruption grew steadily worse. The forehead, nose, cheeks and zygomatic regions were covered with a peculiar, somewhat translucent papular eruption. Many of the lesions were follicular. The Wassermann reaction was negative.

NORMAN TOBIAS, M.D., Secretary.

PHILADELPHIA DERMATOLOGICAL SOCIETY

Regular Meeting, April 1, 1927

ROSE HIRSCHLER, M.D., *Presiding*

VITILIGO. Presented by DR. WEIDMAN.

M. B., a colored woman, aged 92, from the Philadelphia General Hospital, had a patch of pigmentation on each cheek, and one on the left ear. There was entire absence of pigment over the rest of the body. The patient said that her grandfather was white, which suggests an atavistic factor in the case. The parts of the body which were normally deeply pigmented were also depigmented. The patient said that until she was 60 years of age her skin was black.

DISCUSSION

DR. SCHAMBERG: I think that the case is interesting because of the extensive depigmentation. A colored man, whose picture is in my textbook, had

a few small areas on the nose and on the scrotum showing pigment, and the rest of the body was completely white. The so-called "biblical leprosy" was not true leprosy. One of the diseases included was vitiligo. The Bible makes reference to white spots, the hairs of which turn white, and "if all of the skin shall become white he shall be regarded as clean." Naturally with all of the skin white there would be no contrast. Thorough examination of the thyroid gland should be made in these cases, as I have seen several patients who developed exophthalmic goiter and vitiligo.

MELANOTIC CARCINOMA IN A NEGRO. Presented by DR. WEIDMAN.

A. C., a colored woman, aged 70, was admitted to the clinic because of a mild ichthyosis, particularly marked on the legs. She did not call attention to the presence of numerous moles on the face, regarding them as of no consequence. Two years prior to presentation, one of the moles on the left side of the nose began to develop, and finally ulcerated. The presenter referred to a recent report in the literature in which it was stated that when pigmented moles are coal black, the dictum of "hands off" does not apply as strictly as in the less pigmented ones. This condition was presented as melanotic carcinoma, of which only fourteen cases in negroes are reported in the literature. Two of these were presented before this society. The patient was also shown for advice as to treatment.

DISCUSSION

DR. WEIDMAN: The lesion on the face in the position of rodent ulcers may have a modifying effect on the biology and on the treatment.

DR. SCHAMBERG: Carcinoma on the face is rarely seen in negroes. I can remember seeing only one in many thousands of skin conditions in negroes. I agree that this condition started as a nevus and developed into a nevocarcinoma. Keratoses never develop on the face of the darkly pigmented negro, and it would seem that the barrier of pigment is a protection against the actinic rays. In my experience, the brown pigmented moles, unless poorly treated, rarely give rise to carcinoma, and I believe exactly the reverse of Dr. Weidman. The brown moles may be safely destroyed by electrodesiccation. The black, pigmented moles may develop into melanocarcinoma. There is one exception to the relative innocuousness of the brown moles. Treatment of moles has been regarded as too great a bugaboo. The ordinary mole may be successfully treated with little danger of ultimate malignant degeneration provided the entire mole is destroyed. I believe that the procedures which produce great heat in the skin in order to devitalize the mole cells should be used, and that surgical intervention is more apt to be followed by malignant recurrence.

SYRINGOMA. Presented by DR. WEIDMAN.

E. S., a colored man aged 56, from the Philadelphia General Hospital, had scores of slightly elevated, rather uniform, large, pinhead sized, brown papules on the chest. He had had them since the age of 7 years, and the disease was not extending. There were no subjective symptoms. Biopsy was made and enough characteristic change found in the section to place it in this group of syringoma or tricho-epithelioma. The presenter did not know whether or not it had been described in the colored race. Usually syringoma does not extend down the arms as far as this did. The color of the skin modifies the color of the lesions.

DISCUSSION

DR. GREENBAUM: The case is interesting because of the presence of lesions on the lower eyelids of the patient. These lesions have been variously confounded with milium. On section, they show cysts in the corium, and have been variously grouped as cystadenoma and other conditions. I do not believe it has ever been observed that these lesions on the lower eyelid undergo malignant degeneration into tricho-epithelioma. I recall a case in which one lesion had undergone malignant degeneration, and another case in which a lesion developed into basal cell epithelioma. I have seen cystadenoma on the lower lids in negroes.

DR. SCHAMBERG: I would not clinically regard the case cited by Dr. Greenbaum as syringoma. The lesions presented a buff-yellow color, were small, and had an appearance not ordinarily associated with this condition. But histologically the lesions were typical.

DR. WEIDMAN: Dr. McFarland showed me sections from a lid, and they bore a close resemblance to the glands of Mall — highly specialized sweat glands in the lids. Thinking of that, I can see why there was a yellowish cast to the lesions. Morphogically, the condition is close to adenocarcinoma.

HAIRLESS RATS. Presented by DR. WEIDMAN.

The rats were obtained by breeding with a wild rat which was hairless.

PEMPHIGUS. Presented by DR. SCHILDKRAUT.

R. B. D., a white man, aged 59, had dental work done in February, 1926. Following this, he developed lesions on the lips and in the throat. In May he developed a high fever and was put to bed. Smears were positive for Vincent's organisms. He had received much arsphenamine and arsenic in other forms. There was a remission of the condition until September, when it recurred after some dental work. There are white patches which appear to be broken down blebs. There is also an excoriation of the anus.

DISCUSSION

DR. WEIDMAN: I think that it is wise to examine microscopically, material from the floor of the mouth in pemphigus. I recall a case of *Monilia* infection recently reported which simulated pemphigus. This might have been merely contamination, but the appearance of lesions in the mouth is not certainly pathognomonic in pemphigus because of secondary infection and maceration.

DR. HIRSCHLER: There are lesions around the anus, which support the diagnosis of pemphigus.

DR. GREENBAUM: I agree with the presenter that the condition is pemphigus vulgaris, limited to the mucous membranes.

DR. SCHAMBERG: I agree with Dr. Weidman that there is not any appearance of the buccal lesion that is characteristic of pemphigus. The history of these cases shows that pemphigus commonly begins in the mouth and later spreads to the skin. Rupture of the bleb in the mouth occurs early, and it is then covered with a pseudomembrane. This is also true of smallpox. There are other erosive lesions of the mouth which last a long time, which are due to local organisms and are not pemphigus. The infection in pemphigus may possibly get into the mucous membrane of the mouth first, and it may be some time before the resistance of the mucous membrane is overcome — perhaps the

blood stream then carries it to the skin. Exudative erythema, drug eruptions, cinchophen or gold compounds may produce an eruption on the mucous membrane resembling pemphigus. I do not believe that a diagnosis of pemphigus can be made definitely without cutaneous lesions.

DR. GREENBAUM: I am inclined to favor the diagnosis of pemphigus because of the hypersensitiveness of the skin to stroking.

NOTE.—This case has since shown diffuse development of blebs and has been definitely diagnosed as pemphigus.

LICHEN PLANUS. Presented by DR. BRUNDAGE for DR. SCHAMBERG.

T. R. E., a well nourished colored boy, aged 13 years, had headache, sore throat, a fever, moderate pruritus and vomiting five weeks prior to presentation. One week later, the present eruption appeared on the trunk, extremities, soles and palms and to a lesser extent on the face and neck. The primary lesions were firm papules that were slight flattened and shiny, and there was a tendency to coalescence into plaques. There were whitish concentric lines on the tongue, and there were whitish lines on the cheeks opposite the molars. There was a generalized adenopathy, particularly involving the epitrochlears.

DISCUSSION

DR. CORSON: I think that the condition is a most fulminating type of acute lichen planus. This is occasionally seen in the negro, but usually does not show the hypertrophic features that this case shows.

DR. WEIDMAN: The linear arrangement of the nodules is possibly in favor of a diagnosis of lichen planus, but the adenopathy is not suggestive. In some cases the nodules have been translucent and histologic studies have shown the presence of endothelioid cells. The present case may be of a tuberculous nature, but without biopsy, diagnosis is difficult.

DR. GREENBAUM: The patient has been seen only today, and is thought to have the acute form of lichen planus on the basis of the reticulated appearance on the buccal mucous membrane.

DR. CHAMBERS: I agree with the diagnosis of acute fulminating lichen planus.

DR. SCHAMBERG: I hesitate to call this condition lichen planus hypertrophicus, the short duration being against the diagnosis. A number of lesions have a verrucous surface similar to that found in lichen planus. The bulk of the lesions are covered with a crust which shows an acute pathologic process in the skin. The initial illness, five weeks previously, doubtless marked the onset of the condition. I believe the condition is an infectious process, and one cannot exclude syphilis. Frambesia might be considered, if the patient had come from a foreign country.

TRICHOTILLOMANIA. Presented by DR. CHAMBERS for DR. STOKES.

U. F., a child, aged 5, had an alopecia of one and one-half years' duration, and after considerable difficulty, the parents admitted that the child pulled and picked at her scalp.

A CASE FOR DIAGNOSIS. Presented by DR. STRAUSS for DR. MUNSON.

W. E. R., a white girl, aged 3½ years, had had an eruption on the body for six months. The eruption consisted of plaque-like lesions which were coin sized and annular, with an elevated whitish border.

DISCUSSION

DR. WEIDMAN: I suggest a diagnosis of granuloma annulare. Is it true that larger numbers of cases of this disease have been seen in recent years?

DR. HIRSCHLER: I think that possibly they are better recognized today.

DR. WRIGHT: I think that the cases are more numerous. Ten or twelve cases have been reported before this society during the last four years.

DR. GREENBAUM: Is the condition not the variant of granuloma annulare called erythema elevatum diutinum, described by Trimble? Clinically, the cases are slightly different.

DR. WEIDMAN: The histology of the two cases is different. The picture of the latter is more like that seen in rheumatic nodules — almost the same as that of Aschoff's nodules.

REPORT ON A CASE PREVIOUSLY PRESENTED. By DR. CHAMBERS.

The inoculation of a guinea-pig from the large jaw of a colored man seen recently by this Society, was positive for the tubercle bacillus.

LUPUS VULGARIS. Presented by DR. CHAMBERS.

F. de S., a white woman, aged 63, was presented before the society recently as having a case of lupus vulgaris. She received eleven injections of gold and sodium thiosulphate, 100 mg. at biweekly intervals. The eruption has cleared up, except for one lesion. The diagnosis is still lupus vulgaris.

DISCUSSION

DR. WEIDMAN: There is a question of tuberculosis or syphilis, and the sections are difficult to diagnose. Tests on two guinea-pigs were negative for tubercle bacilli. The course of the disease is short for extensive tuberculosis. Syphilis seems to be thoroughly eliminated. It is perfectly possible that other organisms are capable of stirring up chronic diseases. The favorable results of gold and sodium thiosulphate in this case do not necessarily point to a diagnosis of tuberculosis. Further inoculation of guinea-pigs should be made.

DR. SCHAMBERG: The result of gold therapy has opened up several questions. The relatively short duration of the eruption is against a diagnosis of lupus vulgaris. The condition could be a form of tuberculosis of the skin without being lupus vulgaris. The microscopic structure is not characteristic of lupus vulgaris. There is an acute inflammatory reaction in the skin, evidenced by large numbers of polymorphonuclear leukocytes. Would gold and sodium thiosulphate favorably influence any other cutaneous disturbances? Few cases of lupus vulgaris can be completely cured by gold preparations given intravenously. Usually, they are only from 50 to 70 per cent cured. We do not know how gold acts, but we must not forget that gold was once used in the treatment of syphilis, and late lesions can be healed by gold preparations. Gold arsphenamine gives excellent therapeutic results in syphilis, but has, unfortunately, a little higher toxicity. It would be wise to look further for syphilis. I do not think that it is possible to be absolutely sure of the nature of the case, and cure by treatment with gold preparations does not affirm its tuberculous nature.

DR. CHAMBERS: A series of blood Wassermann tests, plus a provocative Wassermann test were made, and twelve injections of neoarsphenamine were given without any results.

DR. WEIDMAN: I have seen two cases in which the ordinary criteria of diagnosis have been upset by secondary infection. The rapid progress of the disease can be explained by the secondary infection.

PARAPSORIASIS. Presented by DR. GUEQUIERRE for DR. SCHAMBERG.

C. R., white man, aged 66, an upholsterer, had an eruption which began twenty-five years prior to presentation on the inner side of both arms. The skin was dry and harsh all over the body. He consulted a physician who gave him some pills and local treatment. Five years previously he consulted Dr. Hartzell. He had always complained about the dryness of the skin, and had had practically no itching except when taking medicine. He had always noticed considerable desquamation. Four months prior to presentation he began to bleed at the places where the skin peeled off. Six years previously the diagnosis of diabetes was made by his physician, and it was for this condition, as well as for the eruption, that he sought hospitalization. He had an ulcer on the tip of the large toe and one at the base of the little toe. Neurologic examination was negative except for diminished knee jerks and loss of the achilles reflexes; this is often seen in diabetes mellitus. His heart showed slight weakness. Blood counts and the Wassermann reaction were negative. Urinalysis and a chemical examination of the blood confirmed the diagnosis of diabetes mellitus. Blood cholesterol was 280 mg. per hundred cubic centimeters of blood.

Dr. Hartzell's notes were brief, they merely stated that the patient had an eruption. He made no diagnosis, but prescribed solution of potassium arsenite (Fowler's solution) and pilocarpine. Dr. Klauder saw the patient several years ago, and made the diagnosis of parapsoriasis.

At present, the cutaneous envelop is the seat of an erythematous eruption with the exception of numerous small islands of normal skin which vary in size from that of a pea to that of a large orange. The erythematous areas are covered with a fine branny desquamation. There is practically no thickening of the skin except for two or three areas the size of a hen's egg which are slightly thickened and infiltrated. There is slight axillary and epitrochlear adenitis, and the glands in the inguinal region are considerably enlarged.

DISCUSSION

DR. WRIGHT: I agree with the diagnosis. With the duration, were it mycosis fungoides, there would be more infiltrated plaques. There also is no itching which should be present in mycosis fungoides.

DR. CORSON: I agree with Dr. Wright.

DR. WEIDMAN: If this was a universal instead of an incomplete eruption, it would approximate an erythroderma. The palms are thickened. The patient has a pronounced tendency to be chilly. As far as the pathologic process and prognosis are concerned, I do not believe that the differential diagnosis makes any difference.

DR. SCHAMBERG: The eruption is not attended with infiltration even after twenty-five years, but rather there is a tendency to atrophy. It is distinctly maculated with areas of intervening normal skin. The sections show atrophy of epidermis, commonly seen in parapsoriasis. There is a horny condition

of the palms, but I hardly think it would be inconsistent with parapsoriasis of twenty-five years' duration. There is a thickened palmar condition in many chronic extensive dermatoses. I agree with the diagnosis.

GRANULOMA ANNULARE. Presented by DR. CHAMBERS for DR. STOKES.

G. V., a white woman aged 55, had a coin sized, circular lesion on the dorsum of the right hand of three years' duration. The lesions on the forearms, similar in appearance, have a duration of six months. Sections were examined by Dr. Weidman, who verified the diagnosis.

DISCUSSION

DR. DENGLER: The lesions may take a variety of forms. In the first case shown, there is a lesion which looks like tinea circinata, and in this case one of the lesions on the right forearm looks like lichen planus.

DR. WEIDMAN: The lesions on the arm are bright red, and there are some independent papules on the arm without a tendency to annulation. These would be good specimens to examine for the causative agent. I believe that there is a certain vascular factor in the causation. The depressed atrophic center looks like that in anemic thrombosis. It might be possible for these to be minute infarcts in the skin, the reaction around them being the foreign body type. There is no destructive agent at work, such as is seen in tuberculosis of the skin.

CARROLL S. WRIGHT, M.D., Secretary.

Book Reviews

HANDBUCH DER HAUT-UND GESCHLECHTSKRANKHEITEN. Im Auftrage Der deutschen dermatologischen Gesellschaft. Herausgegeben Gemeinsam mit G. ARNDT, B. BLOCH, A. BUSCHKE, E. FINGER, E. HOFFMANN, C. KREIBICH, F. PINKUS, G. RIEHL, L. v. ZUMBUSCH, J. von JADASSOHN. Berlin: Julius Springer, 1927.

The two volumes published are the first of perhaps the most ambitious and extensive exposition on dermatology and syphilis which has ever been attempted. Its inception was in 1912, and was nothing less than a comprehensive encyclopedia of dermatology. The work was stopped by the World War, but now the authors have taken it up again and are proposing to complete it as rapidly as possible. It is issued under the auspices of the Deutsche Dermatologische Gesellschaft, with an editorial board headed by Prof. J. Jadassohn as editor-in-chief, and with the collaboration of a large number of the best known men in the field of German dermatology. The colossal size of the undertaking is indicated by the fact that it is to appear in twenty-two volumes, as follows: Volume 1, entitled "The Anatomy and Physiology of the Skin," will be in two parts; the first part, a large octavo volume of 561 pages, has appeared. Volumes 2, 3 and 4 are to be entitled "General Etiology and Pathology"; volume 5 (in two parts) will be entitled "Therapy." Consideration of the various dermatoses is to begin in volume 6 and to continue through volumes 6, 7, 8 (in two parts), 9, 10 (in two parts), 11, 12 (in two parts), 13 (in two parts) and 14 (in two parts). A study of venereal diseases begins with volume 15. Volume 15 (in two parts) is devoted to the etiology and general pathology of syphilis. Volume 16 and volume 17 (in three parts) are given to the special pathology of syphilis; volume 18 to the therapy of syphilis; volume 19 to congenital syphilis; volume 20 to gonorrhea; volume 21 to chancroid and other diseases of the urogenital organs and volume 22 to the sociology, statistics and history of veneral diseases.

Fourteen volumes are devoted to diseases of the skin; eight volumes to venereal diseases.

The work promises to be a monumental treatise on diseases of the skin. With few exceptions, the authors of the various subjects assigned to them are men who are well known for especial work in these particular lines. There will doubtless be some lack of balance among the articles, because that is inevitable in an encyclopedia by many authors; but there can be little doubt that these inequalities will be kept as slight as possible and the contributions maintained at a high standard by the editorial board under which the undertaking is being made and with the general direction of Jadassohn.

The volumes which have now been published are part 1 of volume 1 and volume 19. Either of them in itself is a large treatise. Volume 1, part 1, is entitled "The Anatomy of the Skin," to which is devoted 554 pages. In this volume 369 pages deal with the normal anatomy of the skin by Prof. Felix Pinkus, Berlin; the part on blood vessels is written by Prof. Werner Spalteholz, Leipzig, and contains 52 pages; the pigment is discussed by Prof. Bruno Bloch, Zurich, and this part contains 114 pages. The next part of this volume is to include a description of microscopic technic, by H. Hoepke of Heidelburg, and Dr. J. Schumacher of Berlin; a chapter on physiology by Prof. M. von Frey of Wurzburg and a chapter on chemistry by H. Fottron of Geeson, and Dr. F. Schaaf of Zurich.

The other volume which has been published is that on congenital syphilis. This subject is not covered in such detail as is the anatomy of the skin in the

first volume, but the whole subject is comprehensively considered by men who are of the highest standing in German syphilology.

The volumes which have been published leave nothing to be desired. In completeness, in authoritative scholarship, in presentation and in illustrations, they maintain the highest standards. There are a number of beautiful colored illustrations which are of the excellent quality found in continental European publications, and which are the envy of writers living in countries in which expense makes such presentations prohibitive. The future volumes of this encyclopedia will be looked forward to with great interest. It is to be hoped that they will appear rapidly. If the plan is carried out to its completion with the elaborate detail of the volumes which have now appeared, this encylopedia will be the most complete and authoritative exposition of dermatology that has ever been made. It is the greatest credit to German dermatology that its leaders are undertaking this at the present time.

LES SYPHILIS VISCÉRALES TARDIVES. By M. GRENET, Médecin de l'Hôpital Bretonneau, R. LEVENT, et L. PELLISSIER, Interne des Hôpitaux de Paris. Paper. Price, 32 francs. Pp. 378. Paris: Masson et Cie, 1927.

In addition to emphasizing the teachings of the French school, this book gives a concise and practical presentation of a most important subject. One notes with pleasure a number of references to the contributions of our countrymen. Taken as a whole, the book can be well recommended to those who are interested in this question, and that includes most of us.

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